PATENT
Docket No. 316.0010 0120
(formerly 129.0010 0120)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellants:	Marlyn J. ANDERSON et al.)	Group Art Unit:	2638
Serial No.:	09/826,394)	Examiner:	David C. Payne
Confirmation No.:	2939)		
Filed:	03 April 2001)		

For: LOW POWER PORTABLE COMMUNICATION SYSTEM WITH WIRELESS RECEIVER AND METHODS REGARDING SAME

APPEAL BRIEF

Commissioner for Patents
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Sir:

This Brief is presented in support of the Appeal filed 17 July 2006, from the final rejection of claims 1-78 mailed 17 January 2006 (hereinafter the "Final Rejection") of the above identified application under 37 C.F.R. §§1.113 and 1.191.

This Brief is being submitted as set forth in 37 C.F.R. §41.37. Please charge the fee for filing this Brief under 37 C.F.R. §41.20(b)(2) to Deposit Account No. 13-4895.

I. REAL PARTY IN INTEREST

The real party in interest of the above-identified patent application is the assignee, Great American Technologies, Inc., evidenced by the assignment of the application from the inventors to Voice and Wireless Corporation, recorded on 16 August 2002 at Reel 013207, Frame 0007, and further by the assignment of the application from Voice and Wireless Corporation to Great American Technologies, Inc., recorded on 11 December 2006 at Reel 018622, Frame 0465.

II. RELATED APPEALS AND INTERFERENCES

There are no appeals or interferences known to Appellant's Representatives which would directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-78, which are pending and currently under rejection by the Examiner, are the subject of this Appeal (see Claims Appendix).

Claims 1-10, 12, 14-22, 24-55, and 57-78 are presently rejected under 35 U.S.C. §103(a) as being unpatentable over May (U.S. Patent No. 5,446,783 A) (hereafter "May") in view of Rybicki et al. (U.S. Patent No. 6,151,149) (hereinafter "Rybicki") and Ruppert et al. (U.S. Patent No. 6,236,969 B1) (hereinafter "Ruppert") and Pieterse et al. (U.S. Patent No. 5,714,741 A) (hereinafter "Pieterse") and Weatherill (U.S. Patent No. 5,881,149) (hereinafter "Weatherill").

Claims 11, 13, 23, and 56 are presently rejected under 35 U.S.C. §103(a) as being unpatentable over May, Rybicki, Ruppert, Pieterse, and Weatherill as applied to claims 1, 17, and 51 in the Final Office Action, and further in view of Noetzel (U.S. Patent No. 4,980,926 A) (hereinafter "Noetzel").

IV. STATUS OF AMENDMENTS

No amendment was filed subsequent to issuance of the Final Rejection of claims 1-78 mailed 17 January 2006.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Independent claim 1 and dependent claims 2, 6-7, 11, 13, and 15

Independent claim 1 is directed to a portable communication system (e.g., system 700, such as shown in Figure 17 and described beginning at page 35, line 3 through page 37, line 22 of the specification) for use by a user with a communication apparatus (e.g., apparatus 760, such

as a cellular phone) having an audio port (e.g., audio port 764, such as a speaker/microphone jack of a cellular phone, or port 850 as shown in Figure 18B). The portable communication system (e.g., system 700) includes an infrared transmitter apparatus (e.g., transmitter apparatus 712, such as the infrared transmitter apparatus 810 as shown in Figures 18 and 19 and described at page 41, line 1 through page 45, line 15 of the specification) and an infrared receiver apparatus (e.g., receiver apparatus 714, such as the infrared receiver apparatus 920 as shown in Figures 21A-21E and described at page 29, line 5 through page 33, line 10 of the specification).

The infrared transmitter apparatus (e.g., infrared transmitter apparatus 810) includes at least one audio port (e.g., audio port 851 as shown in Figure 18B) configured to receive an audio signal representative of received audio input from the communication apparatus (e.g., audio signal from the cellular phone provided to the infrared transmitter 810 via a wired connection 815 between the infrared transmitter 810 and the cellular phone apparatus 804, also shown in Figure 18B). The infrared transmitter apparatus (e.g., infrared transmitter apparatus 810) further includes at least one infrared light emitting device (e.g., infrared light emitting devices 821, such as LEDs). Further, the infrared transmitter apparatus (e.g., infrared transmitter apparatus 810) includes modulation circuitry (e.g., transmitter circuitry 898 as shown in Figure 19H) operable to convert the audio signal to one or more constant width electrical pulses to drive the infrared light emitting device to transmit one or more corresponding constant width infrared pulses (e.g., as described with reference to Figure 2 at page 14, line 3 through page 16, line 21 of the specification). Still further, the infrared transmitter apparatus (e.g., infrared transmitter apparatus 810) includes a microphone (e.g., microphone 823, see Figure 19D) coupled to the at least one audio port (e.g., audio port 851 as shown in Figure 18B) of the infrared transmitter apparatus (e.g., infrared transmitter apparatus 810) and operable to generate an audio signal from received sound input of the user, wherein the audio signal generated from received sound input of the user is provided to the audio port of the communication apparatus (e.g., audio port or jack 850 of the cellular phone apparatus 804 as shown in Figure 18B) via the audio port (e.g., audio port 851 as shown in Figure 18B) of the infrared transmitter apparatus.

A transmitter housing (e.g., housing 819) is provided that encloses the modulation circuitry (e.g., transmitter circuitry 898 as shown in Figure 19H) and the microphone (e.g., microphone 823) and upon which the at least one infrared light emitting device (e.g., infrared light emitting device 821) is mounted. The transmitter housing (e.g., housing 819) is of a size smaller than the communication apparatus (e.g., cellular phone apparatus 804) and configured to be removably coupled onto the communication apparatus (e.g., removably coupled to the cellular phone apparatus 804, such as by an adhesive system, a mechanical attachment system, etc. as described on page 42, lines 17-21 of the specification).

The infrared receiver apparatus (e.g., infrared receiver apparatus 920 as shown in Figures 21A-21E) includes an infrared light detection device to detect the one or more corresponding constant width infrared pulses and generate one or more electric signals representative of the detected infrared pulses (e.g., infrared light detection device 926 which may include infrared detection elements 946 mounted as shown in Figure 21E), a speaker (e.g., speaker 942 mounted as shown in Figure 21E), and demodulation circuitry (e.g., circuitry 944 as shown in Figure 21E) operable to convert the one or more electric signals representative of the detected infrared pulses to an audio signal to power the speaker (e.g., speaker 942) to produce a sound output (e.g., as described with reference to Figure 2 at page 14, line 3 through page 16, line 21 of the specification).

A receiver housing (e.g., receiver housing 929 as shown in Figures 21A-21E) is provided that encloses the speaker (e.g., speaker 942) and the demodulation circuitry (e.g., circuitry 944) and upon which the infrared light detection device (e.g., infrared light detection device 926) is mounted. The receiver housing (e.g., receiver housing 929) is formed to be self-supported by the ear 18 of the user (e.g., an in the ear receiver housing securable within the concha of the ear such as shown in Figures 21A-21E and described with reference thereto at page 29, line 24 through page 30, line 11 of the specification).

For example, with the transmitter apparatus 810 electrically connected to the phone apparatus 804 (e.g., via a wired connection 815 between audio port 850 and audio port 851),

audio signals from the phone apparatus 804 are provided via the ports 850 and 851 to the transmitter apparatus 810. Such audio signals are then operated upon by the transmitter circuitry to provide IR signals 809 from the IR light emitting elements 821 to be received by an IR receiver (e.g., receiver 920). Likewise, sound input from a user 801 are received at the microphone 823 of the transmitter apparatus 810. The microphone 823 generates an audio signal representative thereof and provides, preferably after appropriate amplification (e.g., such as set forth in claim 2 of the pending application), the audio signal from the transmitter apparatus 810 to the phone apparatus 804 via the ports 851 and 850. One will recognize that the phone apparatus 804 may then operate on the audio signal received in such a manner using any functionality that the phone apparatus 804 is capable of providing, e.g., voice recognition properties, etc.

Dependent claim 2 is directed to the portable communication system summarized above with reference to claim 1 and further describes that the microphone (e.g., microphone 823 of the transmitter apparatus 810) is coupled to the at least one audio port of the infrared transmitter apparatus (e.g., audio port 851 as shown in Figure 18B) via an amplification circuit (e.g., amplification circuit 753 as shown in Figure 17 and described at page 37, line 23 through page 38, line 4) to provide the audio signal with a gain (e.g., gain in the range of 2 to 20 as described in claim 3).

Dependent claims 6 and 7 are directed to the portable communication system summarized above with reference to claim 1 and further describe that the receiver housing (e.g., receiver housing 929) may be an in the ear receiver housing securable within the concha of the ear (e.g., an in the ear receiver housing such as shown in Figures 21A-21E and described with reference thereto at page 29, line 24 through page 30, line 11 of the specification), or a behind the ear receiver housing securable by the pinna of the ear (e.g., such as housing 431 shown in Figure 12 and described at page 27, line 1 through page 28, line 11, or housing 929 with the ear retaining portion 928 as shown in Figure 21C and described at page 33, lines 2-10 of the specification).

Dependent claim 11 is directed to the portable communication system summarized above with reference to claim 1 and further describes that the modulation circuitry (e.g., transmitter circuitry 898 as shown in Figure 19H) includes voice activated power up circuitry (e.g., the sound activated power up circuitry as described at page 17, lines 1-11).

Dependent claim 13 is directed to the portable communication system summarized above with reference to claim 1 and further describes that the demodulation circuitry (e.g., circuitry 944) includes at least amplification circuitry always operable in power-on idle mode when battery devices are connected for operation of the infrared receiver apparatus (e.g., the sound activated power up circuitry as described at page 20, lines 10-26).

Dependent claim 15 is directed to the portable communication system summarized above with reference to claim 1 and further describes that the transmitter housing (e.g., transmitter housing 819 as shown in Figures 19A-19H) is configured to be removably coupled to a removable battery apparatus (e.g., battery apparatus 825 as shown in Figures 19A-19H and described at page 43, line 15 through page 45, line 15, such as a removable battery apparatus that is configured to receive at least one of button type batteries and cylindrical alkaline batteries as described therein and recited in claim 16).

Independent claim 17 and dependent claims 18, 23, and 27

Independent claim 17 is directed to a portable transmitter apparatus (e.g., transmitter apparatus 712, such as the infrared transmitter apparatus 810 as shown in Figures 18 and 19 and described at page 41, line 1 through page 45, line 15 of the specification), as described above with reference to claim 1, for use by a user with a communication apparatus (e.g., apparatus 760, such as a cellular phone) having an audio port (e.g., audio port 764, such as a speaker/microphone jack of a cellular phone). The portable transmitter apparatus (e.g., transmitter apparatus 712, such as the infrared transmitter apparatus 810 as shown in Figures 18 and 19) includes at least one audio port (e.g., audio port 851 as shown in Figure 18B) configured to receive an audio signal representative of received audio input from the communication apparatus (e.g., audio signal from the cellular phone provided to the infrared transmitter 810 via

a wired connection 815 between the infrared transmitter 810 and the cellular phone apparatus 804, also shown in Figure 18B). The infrared transmitter apparatus further includes at least one infrared light emitting device (e.g., infrared light emitting devices 821, such as LEDs). Further, the infrared transmitter apparatus includes modulation circuitry (e.g., transmitter circuitry 898 as shown in Figure 19H) operable to convert the audio signal to one or more constant width electrical pulses to drive the infrared light emitting device to transmit one or more corresponding constant width infrared pulses (e.g., as described with reference to Figure 2 at page 14, line 3 through page 16, line 21 of the specification). Still further, the infrared transmitter apparatus includes a microphone (e.g., microphone 823) coupled to the at least one audio port (e.g., audio port 851 as shown in Figure 18B) of the infrared transmitter apparatus and operable to generate an audio signal from received sound input of the user, wherein the audio signal generated from received sound input of the user is provided to the audio port of the communication apparatus (e.g., audio port or jack 850 of the cellular phone apparatus 804 as shown in Figure 18B) via the audio port (e.g., audio port 851 as shown in Figure 18B) of the infrared transmitter apparatus.

A transmitter housing (e.g., housing 819) is provided that encloses the modulation circuitry (e.g., transmitter circuitry 898 as shown in Figure 19H) and the microphone (e.g., microphone 823) and upon which the at least one infrared light emitting device (e.g., infrared light emitting devices 821) is mounted. The transmitter housing (e.g., housing 819) is of a size smaller than the communication apparatus (e.g., cellular phone apparatus 804) and configured to be removably coupled onto the communication apparatus (e.g., removably coupled to the cellular phone apparatus 804, such as by an adhesive system, a mechanical attachment system, etc. as described on page 42, lines 17-21 of the specification).

Dependent claim 18 is directed to the portable transmitter apparatus summarized above with reference to claim 17 and further describes that the microphone (e.g., microphone 823 of the transmitter apparatus 810) is coupled to the at least one audio port of the infrared transmitter apparatus (e.g., audio port 851 as shown in Figure 18B) via an amplification circuit (e.g., amplification circuit 753 as shown in Figure 17 and described at page 37, line 23 through page

38, line 4) to provide the audio signal with a gain (e.g., gain in the range of 2 to 20 as described in claim 19).

Dependent claim 23 is directed to the portable transmitter apparatus summarized above with reference to claim 17 and further describes that the modulation circuitry (e.g., transmitter circuitry 898 as shown in Figure 19H) includes voice activated power up circuitry (e.g., the sound activated power up circuitry as described at page 17, lines 1-11).

Dependent claim 27 is directed to the portable transmitter apparatus summarized above with reference to claim 17 and further describes that the transmitter housing (e.g., transmitter housing 819 as shown in Figures 19A-19H) is configured to be removably coupled to a removable battery apparatus (e.g., battery apparatus 825 as shown in Figures 19A-19H and described at page 43, line 15 through page 45, line 15, such as a removable battery apparatus that is configured to receive at least one of button type batteries and cylindrical alkaline batteries as described therein and recited in claim 28).

Independent claim 29 and dependent claims 31-32 and 34

Independent claim 29 is directed to a method of using a portable communication system (e.g., system 700, such as shown in Figure 17 and described beginning at page 35, line 3 through page 37, line 22 of the specification) with a phone apparatus (e.g., phone apparatus 804 as shown in Figure 18A) having an audio port (e.g., audio port 850 as shown in Figure 18B). The method includes providing a removable transmitter (e.g., transmitter apparatus 712, such as the infrared transmitter apparatus 810 as shown in Figures 18 and 19). The transmitter (e.g., transmitter apparatus 810) includes at least one audio port (e.g., audio port 851 as shown in Figure 18B) configured to receive an audio signal representative of received audio input from the phone apparatus (e.g., audio signal from the cellular phone 804 provided to the infrared transmitter 810 via a wired connection 815 between the infrared transmitter 810 and the cellular phone apparatus 804, also shown in Figure 18B). The transmitter apparatus further includes a transmitter device (e.g., infrared light emitting device 821, such as LEDs). Further, the transmitter apparatus includes modulation circuitry (e.g., transmitter circuitry 898 as shown in Figure 19H) operable to

convert the audio signal to one or more electrical pulses to drive the transmitter to transmit signals representative of the audio signals (e.g., as described with reference to Figure 2 at page 14, line 3 through page 16, line 21 of the specification). Still further, the transmitter includes a microphone (e.g., microphone 823) coupled to the at least one audio port (e.g., audio port 851 as shown in Figure 18B) of the removable transmitter and operable to generate an audio signal from received sound input of the user, wherein the audio signal generated from received sound input of the user is provided to the audio port of the phone (e.g., audio port or jack 850 of the cellular phone apparatus 804 as shown in Figure 18B) via the audio port (e.g., audio port 851 as shown in Figure 18B) of the transmitter.

A transmitter housing (e.g., housing 819) is provided that encloses the modulation circuitry (e.g., transmitter circuitry 898 as shown in Figure 19H) and the microphone (e.g., microphone 823). The transmitter housing (e.g., housing 819) is of a size smaller than the phone apparatus (e.g., cellular phone apparatus 804). The method further includes securing the removable transmitter onto the phone apparatus (e.g., securing the transmitter to the cellular phone apparatus 804, such as by an adhesive system, a mechanical attachment system, etc. as described on page 42, lines 17-21 of the specification) (See also the method described at page 34, line 21 through page 35, line 2).

Dependent claim 31 is directed to the method summarized above with reference to claim 29 and further describes that the transmitter housing (e.g., transmitter housing 819 as shown in Figures 19A-19H) is configured to be removably coupled to a removable battery apparatus (e.g., battery apparatus 825 as shown in Figures 19A-19H and described at page 43, line 15 through page 45, line 15, such as a removable battery apparatus that is configured to receive at least one of button type batteries and cylindrical alkaline batteries). The method further includes providing the removable battery apparatus and coupling the removable battery apparatus to the transmitter housing when the transmitter housing is secured onto the phone apparatus (e.g., as described at page 45, lines 3-10).

Dependent claim 32 is directed to the method summarized above with reference to claim 29 and further describes that the removable transmitter is a removable infrared transmitter that includes at least one infrared light emitting device (e.g., infrared light emitting devices 821, such as LEDs) and modulation circuitry (e.g., transmitter circuitry 898 as shown in Figure 19H) operable to convert the audio signal to one or more constant width electrical pulses to drive the infrared light emitting device to transmit one or more corresponding constant width infrared pulses (e.g., as described with reference to Figure 2 at page 14, line 3 through page 16, line 21 of the specification).

Further, as set forth in claim 34, the method summarized with reference to claim 29 may further include detaching the removable transmitter from the phone apparatus and securing the removable transmitter to a different phone apparatus (e.g., as describe at page 34, line 21 through page 35, line 2).

Independent claim 35 and dependent claims 36 and 40-41

Independent claim 35 is directed to a portable communication system (e.g., system 700, such as shown in Figure 17 and described beginning at page 35, line 3 through page 37, line 22 of the specification) for use by a user with a communication apparatus (e.g., apparatus 760, such as a cellular phone) that includes components like those summarized above with reference to claim 1, but which is not limited to use of infrared. Dependent claims 36, 40, and 41 also include similar components like those summarized above with reference to claims 2, 6, and 7, respectively, but also not limited to use of infrared.

Independent claim 45 and dependent claims 47-48

Independent claim 45 is directed to a portable communication system (e.g., system 700, such as shown in Figure 17 and described beginning at page 35, line 3 through page 37, line 22 of the specification) for use by a user with a communication apparatus (e.g., apparatus 760, such as a cellular phone) having an audio port (e.g., audio port 764, such as a speaker/microphone jack of a cellular phone). The portable communication system (e.g., system 700) includes a transmitter apparatus (e.g., transmitter apparatus 712, such as the infrared transmitter apparatus

810 as shown in Figures 18 and 19 and described at page 41, line 1 through page 45, line 15 of the specification) and a receiver apparatus (e.g., receiver apparatus 714, such as the infrared receiver apparatus 920 as shown in Figures 21A-21E and described at page 29, line 5 through page 33, line 10 of the specification).

The transmitter apparatus (e.g., infrared transmitter apparatus 810) includes at least one audio port (e.g., audio port 851 as shown in Figure 18B) configured to receive an audio signal representative of received audio input (e.g., audio signal from the cellular phone provided to the infrared transmitter 810) via a wired connection with the audio port of the communication apparatus (e.g., via a wired connection 815 between the infrared transmitter 810 and the cellular phone apparatus 804, also shown in Figure 18B). The transmitter apparatus further includes modulation circuitry (e.g., transmitter circuitry 898 as shown in Figure 19H) operable to convert the audio signal to one or more constant width electrical pulses to drive a transmitter to transmit one or more corresponding constant width infrared pulses (e.g., as described with reference to Figure 2 at page 14, line 3 through page 16, 21 of the specification). Still further, a transmitter housing (e.g., housing 819) is provided that encloses the modulation circuitry (e.g., transmitter circuitry 898 as shown in Figure 19H), is of a size smaller than the communication apparatus (e.g., cellular phone apparatus 804), and is configured to be removably coupled onto the communication apparatus (e.g., removably coupled onto a cellular phone apparatus 804, such as by an adhesive system, a mechanical attachment system, etc. as described on page 42, lines 17-21 of the specification).

The receiver apparatus (e.g., infrared receiver apparatus 920 as shown in Figures 21A-21E) includes a detection device to detect the one or more corresponding constant width infrared pulses and generate one or more electric signals representative of the detected pulses (e.g., infrared light detection device 926, which may include infrared detection elements 946 mounted as shown in Figure 21E), a speaker (e.g., speaker 942 mounted as shown in Figure 21E), and demodulation circuitry (e.g., circuitry 944 as shown in Figure 21E) operable to convert the one or more electric signals representative of the detected pulses to an audio signal to power the

speaker (e.g., speaker 942) to produce a sound output (e.g., as described with reference to Figure 2 at page 14, line 3 through page 16, line 21 of the specification). A receiver housing (e.g., receiver housing 929 as shown in Figures 21A-21E) is provided that encloses the speaker (e.g., speaker 942) and the demodulation circuitry (e.g., circuitry 944). The receiver housing includes an opening (e.g., opening 936 as shown in Figure 21B) defined therein and configured to receive a removable battery apparatus (e.g., battery holding portion 930 as described at page 31, lines 19-25). The receiver housing (e.g., receiver housing 929) is formed to be self-supported by the ear 18 of the user (e.g., an in the ear receiver housing securable within the concha of the ear such as shown in Figures 21A-21E and described with reference thereto at page 29, line 24 through page 30, line 11 of the specification).

Dependent claims 47 and 48 are directed to the portable communication system summarized above with reference to claim 45 and further describe that the receiver housing (e.g., receiver housing 929) may be an in the ear receiver housing securable within the concha of the ear (e.g., an in the ear receiver housing as shown in Figures 21A-21E and described with reference thereto at page 29, line 24 through page 30, line 11 of the specification), or a behind the ear receiver housing securable by the pinna of the ear (e.g., such as housing 431 shown in Figure 12 and described at page 27, line 1 through page 28, line 11, or housing 929 with the ear retaining portion 928 as shown in Figure 21C and described at page 33, lines 2-10 of the specification).

Independent claim 51 and dependent claims 52, 56, and 60

Independent claim 51 is directed to a portable transmitter apparatus (e.g., transmitter apparatus 712, such as the infrared transmitter apparatus 810 as shown in Figures 18 and 19 and described at page 41, line 1 through page 45, line 15 of the specification), already summarized above with reference to the transmitter apparatus of claim 29, for use by a user with a communication apparatus (e.g., apparatus 760, such as a cellular phone) having an audio port (e.g., audio port 764, such as a speaker/microphone jack of a cellular phone).

Dependent claim 52 is directed to the portable transmitter apparatus summarized above with reference to claim 29 and further describes that the microphone (e.g., microphone 823 of the transmitter apparatus 810) is coupled to the at least one audio port of the transmitter apparatus (e.g., audio port 851 as shown in Figure 18B) via an amplification circuit (e.g., amplification circuit 753 as shown in Figure 17 and described at page 37, line 23 through page 38, line 4) to provide the audio signal with a gain (e.g., gain in the range of 2 to 20 as described in claim 53).

Dependent claim 56 is directed to the portable transmitter apparatus summarized above with reference to claim 29 and further describes that the modulation circuitry (e.g., transmitter circuitry 898 as shown in Figure 19H) includes voice activated power up circuitry (e.g., the sound activated power up circuitry as described at page 17, lines 1-11).

Dependent claim 60 is directed to the portable transmitter apparatus summarized above with reference to claim 29 and further describes that the transmitter housing (e.g., transmitter housing 819 as shown in Figures 19A-19H) is configured to be removably coupled to a removable battery apparatus (e.g., battery apparatus 825 as shown in Figures 19A-19H and described at page 41, line 1 through page 45, line 15, such as a removable battery apparatus that is configured to receive at least one of button type batteries and cylindrical alkaline batteries).

Independent claim 61 and dependent claims 62-66

Independent claim 61 is directed to a portable receiver apparatus (e.g., receiver apparatus 714, such as the infrared receiver apparatus 920 as shown in Figures 21A-21E and described at page 29, line 5 through page 33, line 10 of the specification). The portable receiver apparatus (e.g., infrared receiver apparatus 920 as shown in Figures 21A-21E) includes a detection device to detect one or more pulses and generate one or more electric signals representative of the detected pulses (e.g., infrared light detection device 926, which may include infrared detection elements 946 mounted as shown in Figure 21E), a speaker (e.g., speaker 942 mounted as shown in Figure 21E), and demodulation circuitry (e.g., circuitry 944 as shown in Figure 21E) operable to convert the one or more electric signals representative of the detected pulses to an audio signal

to power the speaker (e.g., speaker 942) to produce a sound output (e.g., as described with reference to Figure 2 at page 14, line 3, page 16, line 21 of the specification). The demodulation circuitry (e.g., circuitry 944 as shown in Figure 21E) includes pulse detection circuitry (e.g., block 90 as shown in Figure 2 and described at page 15, line 24 through page 16, line 21) to convert the one or more electrical signals representative of the detected pulses to one or more constant width pulses based thereon, pulse width convertor circuitry (e.g., block 92 as shown in Figure 2 and described at page 15, line 24 through page 16, line 21) to convert the one or more constant width pulses to one or more width modulated pulses, and pulse width demodulation circuitry (e.g., block 96 as shown in Figure 2 and described at page 15, line 24 through page 16, line 21) to convert the one or more width modulated pulses to the audio signal for application to the speaker (e.g., speaker 942). A housing (e.g., receiver housing 929 as shown in Figures 21A-21E) is provided that encloses at least the speaker (e.g., speaker 942) and the demodulation circuitry (e.g., circuitry 944 as shown in Figure 21E), wherein the housing is formed to be self-supported by the ear of a user (e.g., an in the ear receiver housing securable within the concha of the ear such as shown in Figures 21A-21E and described with reference thereto at page 29, line 24 through page 30, line 11 of the specification).

Dependent claim 62 is directed to the portable receiver apparatus summarized above with reference to claim 61 and further describes that the housing (e.g., receiver housing 929 as shown in Figures 21A-21E) may include a body portion (e.g., body portion 922) extending from a first end to a second end along a body portion axis (e.g., axis 923) to enclose at least a portion of the demodulation circuitry (e.g., circuitry 944 as shown in Figure 21E), and an ear retaining portion (e.g., ear retaining portion 928) enclosing the speaker (e.g., speaker 942), wherein the ear retaining portion (e.g., ear retaining portion 928) extends from the first end of the body portion (e.g., body portion 922) along an axis (e.g., axis 931) of predominate sound direction of the speaker (e.g., speaker 942) that is orthogonal to the body portion axis (e.g., axis 923). The ear retaining portion (e.g., ear retaining portion 928) includes a compactable and expandable

material (e.g., material 959) for insertion in the concha of the ear (e.g., as described at page 29, line 12 through page 30, line 11).

Further, dependent claim 63 is directed to the portable receiver apparatus summarized above with reference to claims 61 and 62, and further describes that the body portion (e.g., body portion 922) includes at least one surface (e.g., surface 997 in Figure 21E) that lies a certain distance from the body portion axis (e.g., axis 923) in the direction of extension of the ear retention portion (e.g., ear retaining portion 928), and further wherein the compactable and expandable material (e.g., material 959) of the ear retaining portion (e.g., ear retaining portion 928) is positioned a further distance from the body portion axis (e.g., axis 923) than the at least one surface (e.g., surface 997 in Figure 21E) of the body portion (e.g., body portion 922) (e.g., as described at page 31, lines 3-18).

Further, dependent claim 64 is directed to the portable receiver apparatus summarized above with reference to claims 61 and 62, and further describes that the detection device includes an infrared light detection device (e.g., detection device portion 926 that may include infrared detector elements 946) positioned at the second end of the body portion (e.g., body portion 922) to detect infrared pulses and generate the electrical signals representative of such detected infrared pulses.

Further, dependent claim 65 is directed to the portable receiver apparatus summarized above with reference to claims 61 and 62, and further describes that the receiver housing includes an opening (e.g., opening 936 as shown in Figure 21B) defined therein and configured to receive a removable battery apparatus (e.g., battery holding portion 930 as described at page 31, lines 19-25). Dependent claim 66 is directed to a retaining structure (e.g., retaining structure 697 and 677 in the opening 936) to secure the removable battery apparatus (e.g., battery holding portion 930 as described at page 31, lines 19-25) in the opening (e.g., opening 936).

Independent claim 69 and dependent claims 70-72

Independent claim 69 is directed to a portable receiver apparatus (e.g., receiver apparatus 714, such as the infrared receiver apparatus 920 as shown in Figures 21A-21E and described at

page 29, line 5 through page 33, line 10 of the specification). The portable receiver apparatus (e.g., infrared receiver apparatus 920 as shown in Figures 21A-21E) includes an ear retaining portion (e.g., ear retaining portion 928) enclosing the speaker (e.g., speaker 942), wherein the ear retaining portion (e.g., ear retaining portion 928) terminates with a compactable and expandable material (e.g., material 959) for insertion in the concha of an ear of a user (e.g., as described at page 29, line 12 through page 30, line 11). The portable receiver apparatus further includes a body portion (e.g., body portion 922) extending from a first end to a second end along a body portion axis (e.g., axis 923), wherein the ear retaining portion (e.g., ear retaining portion 928) extends from the first end of the body portion (e.g., body portion 922) along an axis (e.g., axis 931) of predominate sound direction of the speaker (e.g., speaker 942) that is orthogonal to the body portion axis (e.g., axis 923). An infrared light detection device (e.g., detection device portion 926 that may include infrared detector elements 946) is positioned at the second end of the body portion (e.g., body portion 922) to detect infrared pulses and generate the electrical signals representative of such detected infrared pulses.

Further, the body portion (e.g., body portion 922) encloses at least demodulation circuitry (e.g., circuitry 944 as shown in Figure 21E) operable to convert the one or more electrical signals representative of the detected infrared pulses to an audio signal to power the speaker (e.g., speaker 942) to produce a sound output. The demodulation circuitry (e.g., circuitry 944 as shown in Figure 21E) includes pulse detection circuitry (e.g., block 90 as shown in Figure 2 and described at page 15, line 24 through page 16, line 21) to convert the one or more electrical signals representative of the detected pulses to one or more constant width pulses based thereon, pulse width convertor circuitry (e.g., block 92 as shown in Figure 2 and described at page 15, line 24 through page 16, line 21) to convert the one or more constant width pulses to one or more width modulated pulses, and pulse width demodulation circuitry (e.g., block 96 as shown in Figure 2 and described at page 15, line 24 through page 16, line 21) to convert the one or more width modulated pulses to the audio signal for application to the speaker (e.g., speaker 942).

Further, dependent claim 70 is directed to the portable receiver apparatus summarized above with reference to claim 69, and further describes that the body portion (e.g., body portion 922) includes at least one surface (e.g., surface 997 in Figure 21E) that lies a certain distance from the body portion axis (e.g., axis 923) in the direction of extension of the ear retention portion (e.g., ear retaining portion 928), and further wherein the compactable and expandable material (e.g., material 959) of the ear retaining portion (e.g., ear retaining portion 928) is positioned a further distance from the body portion axis (e.g., axis 923) than the at least one surface (e.g., surface 997 in Figure 21E) of the body portion (e.g., body portion 922) (e.g., as described at page 31, lines 3-18).

Further, dependent claim 71 is directed to the portable receiver apparatus summarized above with reference to claim 69, and further describes that the receiver housing includes an opening (e.g., opening 936 as shown in Figure 21B) defined therein and configured to receive a removable battery apparatus (e.g., battery holding portion 930 as described at page 31, lines 19-25). Dependent claim 72 is directed to a retaining structure (e.g., retaining structure 997 and 977 in the opening 936 in Figure 21E) to secure the removable battery apparatus (e.g., battery holding portion 930 as described at page 31, lines 19-25) in the opening (e.g., opening 936).

Independent claim 75 and dependent claims 76-77

Independent claim 75 is directed to a portable receiver apparatus (e.g., receiver apparatus 714, such as the infrared receiver apparatus 920 as shown in Figures 21A-21E and described at page 29, line 5 through page 33, line 10 of the specification, or receiver apparatus 470 as described with reference to Figure 14 at page 28, line 12 through page 29, line 4). The portable receiver apparatus (e.g., infrared receiver apparatus 920 or 470) includes ear retaining means (e.g., ear retaining portion 928 or speaker portion 472) for enclosing a speaker (e.g., speaker 942) and configured for insertion in the concha of an ear of a user (e.g., as described at page 29, line 12 through page 30, line 11, or page 28, line 12-21). The portable receiver apparatus (e.g., infrared receiver apparatus 920 or 470) further includes infrared light detection means (e.g., infrared detector elements 946 or any other infrared sensitive elements such as photodiodes, as

described on page 28, line 28) for detecting infrared pulses and generate the electrical signals representative of such detected infrared pulses. Still further, the portable receiver apparatus (e.g., infrared receiver apparatus 920 or 470) further includes body portion means (e.g., body portion 922 or elongated portion 476) for enclosing at least demodulation circuitry (e.g., circuitry 944 as shown in Figure 21E) operable to convert the one or more electrical signals representative of the detected infrared pulses to an audio signal to power the speaker (e.g., speaker 942) to produce a sound output. The body portion means (e.g., body portion 922) extends from a first end to a second end along a body portion axis (e.g., axis 923) and the ear retaining means (e.g., ear retaining portion 928 or speaker portion 472) extends from the first end of the body portion (e.g., body portion 922 or elongated portion 476) along an axis (e.g., axis 931) of predominate sound direction of the speaker (e.g., speaker 942) that is orthogonal to the body portion axis (e.g., axis 923). The infrared light detection means (e.g., detector portion 926 that may include infrared infrared detector elements 946) is positioned at the second end of the body portion means (e.g., body portion 922 or elongated portion 476).

Further, dependent claim 76 is directed to the portable receiver apparatus summarized above with reference to claim 75, and further describes that the body portion means (e.g., body portion 922) includes means for receiving a removable battery apparatus (e.g., battery holding portion 930 as described at page 31, lines 19-25). Dependent claim 77 is directed to retaining means (e.g., retaining structure 697 and 677 in the opening 936 of Figure 2E) to secure the removable battery apparatus (e.g., battery holding portion 930 as described at page 31, lines 19-25) in the body portion means (e.g., body portion 922).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

FIRST GROUND OF REJECTION

Claims 1-10, 12, 14-22, 24-55, and 57-78 stand rejected under 35 U.S.C. §103(a) as being unpatentable over May (U.S. Patent No. 5,446,783 A) (hereafter "May") in view of Rybicki et al. (U.S. Patent No. 6,151,149) (hereinafter "Rybicki") and Ruppert et al. (U.S. Patent

No. 6,236,969 B1) (hereinafter "Ruppert") and Pieterse et al. (U.S. Patent No. 5,714,741 A) (hereinafter "Pieterse") and Weatherill (U.S. Patent No. 5,881,149) (hereinafter "Weatherill") as set forth in the Final Rejection.

SECOND GROUND OF REJECTION

Claims 11, 13, 23, and 56 stand rejected under 35 U.S.C. §103(a) as being unpatentable over May, Rybicki, Ruppert, Pieterse, and Weatherill as applied to claims 1, 17, and 51 in the Final Rejection, and in further view of Noetzel (U.S. Patent No. 4,980,926 A) (hereinafter "Noetzel").

VII. ARGUMENT

FIRST GROUND OF REJECTION

Claims 1-10, 12, 14-22, 24-55, and 57-78 are not unpatentable over May in view of Rybicki and Ruppert and Pieterse and Weatherill

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references must teach or suggest all the claim limitations. See M.P.E.P. §2143.

"To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." M.P.E.P. §2143.03, *citing, In re Royka*, 490 F.2d 981, 180 U.S.P.Q. (BNA) 580 (CCPA1974).

"Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so." M.P.E.P. §2143.01, *citing In re Kahn*, 441 F.3d 977, 986, 78 USPQ2d 1329, 1335 (Fed. Cir. 2006) (discussing rationale underlying the motivation-suggestion-teaching requirement as a guard against using hindsight in an obviousness analysis).

Appellant asserts that, as set forth below with reference to each separately identified individual claim and/or group of claims, the Examiner has failed to establish a *prima facie* case of obviousness of claims 1-10, 12, 14-22, 24-55, and 57-78 24-46 over May in view of Rybicki and Ruppert and Pieterse and Weatherill for at least the reason that the combination fails to teach or suggest all limitations of Appellant's claims, and/or further that there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the reference teachings of all of the cited references so as to arrive at the claimed invention.

May (U.S. Patent No. 5,446,783) describes a battery pack that is removably mounted on the back of a cellular phone. The battery pack contains an infrared port 51 (see Fig. 3B) for transmitting infrared information between the cellular phone and a computer (i.e., capable of sending and/or receiving infrared signals). A device interface 25 and passthru device interface 55 (see Fig. 4) are connected to an infrared convertor 60 which converts electrical information to infrared information for transmission between the cellular phone and the computer via the infrared port 51. The passthru device interface 55 "allows conventional cellular phone accessories, such as a "hands free" kit, external antenna, external power, etc., to continue to work with the cellular phone 40," but does not provide such handsfree functionality (See column 3, lines 1-20).

Rybicki (U.S. Patent No. 6,151,149) describes various ways of encoding pulses, such as by pulse positioning modulation, pulse pattern modulation, and/or pulse amplitude modulation.

Ruppert (U.S. Patent No. 6,236,969 B1) describes a telephone headset 10 (see Fig. 1) that "further includes an ear speaker 20 that is engaged within the mouthpiece 16 at the opposite end from the microphone 18. An ear cushion 21 is provided so that the microphone can be supported and seated *against* the ear of the user. The headband 12 is provided in adjustable sections. The band includes a fixed section 12a that is attached to the electronics housing 14. A strap 12b extends from the fixed section and is adjustably engaged by a movable section 12c. In this respect, the headband 12 can be of a conventional design to permit adjustment to accommodate the head of the user. The movable section 12c can be provided with a counterweight at its free

end to balance the weight of the headset components on the user's head." (Emphasis Added) (Column 4, lines 10-22). The cushion 21 is not inserted in the concha of the ear of a user, but is rather against the ear. As described at column 6, line 57 through column 7, line 21, a base unit 70 that can operate within a telephone system, includes an I/R interface 88 that can transmit an infrared signal to the telephone headset 10. The headset can be provided with a corresponding I/R interface 89, located on the underside of the mouth piece 16. Circuitry within the headphone control electronics component 32 can be used to receive and condition signals transmitted via the I/R interfaces 88 and 89. Various I/R communication configurations are described.

Pieterse (U.S. Patent No. 5,714,741 A) describes "a housing 2, a microphone 3, a loudspeaker 4, a first LED 5, a second LED 6, and a control button 7. In the embodiment shown, the housing 2 is composed of two parts 2a and 2b, which are interconnected by means of a hinge 10. In the housing 2 (part 2a) a slot 8 is recessed for inserting an IC card 11." (Column 4, 38-43) As described in column 2, lines 60-65, a device provides a means for exchanging data between the IC card and a remote terminal via a communication apparatus.

Weatherill (U.S. Patent No. 5,881,149 A) describes a portable communications device with a wireless transmitter and detachable earpiece that includes a wireless receiver. The detachable earpiece is shown in Figure 1A as a "moulded plastic main body 4 which includes a shaped portion 6 which defines a slot 8 between the portion 6 and the body 4. The slot 8 and portion 6 are shaped to allow the part to be placed and retained on a persons ear. Within the body 4 there is provided a speaker 10 for the playing of information into the persons ear . . . when a message is received by the signal receiver with the part either from another part of the device or from a point remote to the person wearing the part." (See column 4, line 58 to column 5, line 3).

Independent Claim 1 (and Dependent Claims 4-5, 8-10, 12, and 14) and
Independent Claim 35 (and Dependent Claims 38-39 and 42-44)

Claim 1 recites a portable communication system for use by a user with a communication apparatus having an audio port (e.g., a speaker/microphone jack). The system includes an

infrared transmitter apparatus that includes at least one audio port configured to receive an audio signal representative of received audio input from the communication apparatus, at least one infrared light emitting device, modulation circuitry, and a microphone coupled to the at least one audio port of the infrared transmitter apparatus and operable to generate an audio signal from received sound input of the user. The audio signal generated from received sound input of the user (e.g., someone talking hands-free in a car) is provided to the audio port of the communication apparatus via the audio port of the infrared transmitter apparatus. A transmitter housing is provided that encloses the modulation circuitry and the microphone and upon which the at least one infrared light emitting device is mounted, and further that is configured to be removably coupled to the communication apparatus.

Further, the system recited in claim 1 includes an infrared receiver apparatus that includes an infrared light detection device, a speaker, demodulation circuitry operable to convert the one or more electric signals representative of the detected infrared pulses to an audio signal to power the speaker to produce a sound output, and a receiver housing enclosing the speaker and the demodulation circuitry and upon which the infrared light detection device is mounted. The receiver housing is formed to be self-supported by the ear of the user.

Claim 35 includes similar components, but is not limited to infrared components as described in the Summary of Claimed Subject Matter herein. As such, the same arguments for patentability apply to claim 35 as set forth for claim 1.

The references cited do not teach or suggest all the limitations recited in claims 1 and 35

The references cited do not teach or suggest all the limitations recited in claims 1 and 35. For example, as acknowledged by the Examiner, May does not teach or suggest a microphone coupled to the at least one audio port of the transmitter apparatus and operable to generate an audio signal from received sound input of the user. Further, as acknowledged by the Examiner, May does not describe that the audio signal generated from received sound input of the user (e.g., someone talking hands-free in a car) is provided to the audio port of the communication apparatus (e.g., cellular phone) via the audio port of the transmitter apparatus. Yet further, as acknowledged by the Examiner, May does not teach or suggest a transmitter housing that

encloses the modulation circuitry and the microphone, and which is configured to be removably coupled to the communication apparatus. Yet further, as acknowledged by the Examiner, May does not teach or suggest a receiver apparatus that includes a detection device, a speaker, demodulation circuitry, and a receiver housing enclosing the speaker and the demodulation circuitry; wherein the receiver housing is formed to be self-supported by the ear of the user. (See Final Rejection, pages 3 and 4).

The Examiner alleges that Ruppert describes "a microphone (Fig. 1#18) coupled to the at least one audio port of the infrared transmitter apparatus and operable to generate an audio signal from received sound input of the user, wherein the audio signal generated from received sound input of the user is provided to the audio port of the communication apparatus via the audio port of the infrared transmitter apparatus." (See Final Rejection, page 5). However, Ruppert does not describe a microphone in a transmitter apparatus that has an audio port connected to an audio port of the communication apparatus (e.g., a phone) so the audio signal generated from received sound input of the user (e.g., someone speaking hands-free in a car) is provided to the audio port of the communication apparatus via the audio port of the transmitter apparatus. Rather, Ruppert teaches a microphone that is part of the receiver/transmitter headset and not a transmitter apparatus that is removably coupled to the communication apparatus (e.g., phone). As such, there is no communication from the microphone to the audio port of the transmitter apparatus and then to the audio port of the communication apparatus to which it is coupled. The most that Ruppert teaches is the use of a microphone in a receiver/transmitter headset and/or a microphone in a base station. Contrary to the Examiner's allegations, Ruppert does not teach or suggest the use of a microphone in a transmitter apparatus that is removably coupled to the communication apparatus as described according to the present invention.

The Examiner further alleges that Pieterse discloses "a removably coupled transmitter (2a of Figure 3) onto the communication apparatus." (See Final Rejection, page 5). However, Pieterse does not teach or suggest such a removably coupled transmitter. Pieterse only discloses a device that provides a means for exchanging data between the IC card and a remote terminal

via a communication apparatus. It is unclear which portions of Figure 3 that the Examiner asserts is removably coupling a transmitter to the communication apparatus. Appellants continue to assert that this element is not shown by Pieterse. The Examiner has failed to show with specificity which elements are alleged to be the removably coupled transmitter, and as such, Appellants have not had the ability to respond to a reasoned rejection.

Neither Rybicki, Weatherill, nor the other references cited, do anything to cure the lack of teaching or suggestion of the missing elements.

Lack of suggestion or motivation to combine the reference teachings

There is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the reference teachings of all of the cited references so as to arrive at the claimed invention. Particularly, there is nothing that would motivate one skilled in the art to modify May with the teachings of the other four (4) cited references so as to arrive at the present invention described in claims 1 and 35.

For example, as described above, May describes a battery pack that is removably mounted on the back of a cellular phone. The battery pack contains an infrared port 51 for transmitting infrared information between the cellular phone and a computer (i.e., capable of sending and/or receiving infrared signals). A device interface 25 and passthru device interface 55 are connected to the infrared convertor 60 which converts electrical information to infrared information for transmission between the cellular phone and the computer via the infrared port 51. The passthru device interface 55 "allows conventional cellular phone accessories, such as a "hands free" kit, external antenna, external power, etc., to continue to work with the cellular phone 40." (See column 3, lines 1-20) The functions and configuration of the cellular phone of May are quite different than a receiver that is to be self supported by the ear of a user, or a transmitter that is removably coupled from a cellular phone, so as to, for example, permit hands free communication between a communication apparatus (e.g., a phone) and the receiver. Rather, as stated in May, passthru device interface 55 "allows conventional cellular phone

accessories, such as a "hands free" kit to work with the cellular phone 40. In other words, the device interface of *May does not itself provide for hands free communication* (as does the present invention), but rather just provides communication of information via infrared transmission between the cellular phone and a computer.

No wireless communication from the cellular phone to a receiver supported by the ear of a user is described by May. This is clearly recognized by the Examiner in the Office Action which has acknowledged that May clearly is lacking a substantial number of elements in the pending claims, including, for example, lacking a microphone coupled to the at least one audio port of the transmitter apparatus and operable to generate an audio signal from received sound input of the user; lacking a teaching that the audio signal generated from received sound input of the user (e.g., someone talking hands-free in a car) is provided to the audio port of the communication apparatus (e.g., phone) via the audio port of the transmitter apparatus; lacking a transmitter housing that encloses the modulation circuitry and the microphone that is configured to be removably coupled onto the communication apparatus; lacking a receiver apparatus that includes a detection device, a speaker, demodulation circuitry; lacking a receiver housing enclosing the speaker and the demodulation circuitry; and lacking a receiver housing that is formed to be self-supported by the ear of the user.

Yet, the Examiner indicates that motivation and suggestion exists between all of the cited references such that they would be combined. Appellants traverse such allegation and set forth that May, which describes an infrared communication technique between a cellular phone and a computer, would not be modified as alleged by the Examiner to include bits and pieces from four (4) other references that would incorporate functional components into May such as a receiver that is to be self supported by the ear of a user, or a transmitter that is removably coupled from a communication apparatus (e.g., a cellular phone) so as to, for example, permit hands free communication between the communication apparatus (e.g., a cellular phone) and the receiver supported on the ear of the user. There is no reason for modifying May in such a manner when May has no intention of ever providing the functionality described in the pending claims.

Yet further, the Examiner's citation and combination of five (5) references along with the lack of motivation clearly shows that the Examiner is doing nothing more than performing improper hindsight reconstruction of the claimed invention. The teaching or suggestion to make the combination and a reasonable expectation of success must both be found in the prior art, and not based on Appellants' disclosure. To combine the teachings of all the references as alleged by the Examiner could hardly be expected to reasonably succeed. A reasonable expectation of success is necessary to establish a *prima facie* case of obviousness. See M.P.E.P. §2143.

For example, the configuration and functionality of an ear supported receiver (e.g., an infrared receiver) as described in the pending claims (e.g., using the modulation techniques described therein, using particular structures, etc.) is no easy task to design. This is particularly the case when low power is required to maintain a small battery size and lengthen the life of the battery as well. The five (5) references cited by the Examiner, and particularly when May (e.g., a reference that does not even include a wireless receiver) is alleged to be modified, could not have given any person skilled in the art a reasonable expectation that a combination of such references would result in success.

For at least the above reasons, claims 1 and 35 are not obvious and unpatentable in view of the cited references. Further, as claims 4-5, 8-10, 12, and 14 depend from independent claim 1, and further as claims 38-39 and 42-44 depend on independent claim 35, either directly or indirectly, they include the limitations thereof. As such, these claims are also not obvious over the cited references for the same reasons as provided above with respect to claims 1 and 35.

Dependent Claims 2-3

Dependent claim 2 is dependent on claim 1 and as such includes the limitations thereof. Therefore, claim 2 is also not obvious over the cited references for the same reasons as provided above with respect to claim 1. Further, claim 2 describes that the microphone (e.g., microphone 823 of the transmitter apparatus 810) is coupled to the at least one audio port of the infrared transmitter apparatus (e.g., audio port 851 as shown in Figure 18B) via an amplification circuit

(e.g., amplification circuit 753 as shown in Figure 17 and described at page 37, line 23 through page 38, line 4) to provide the audio signal with a gain (e.g., gain in the range of 2 to 20 as described in claim 3).

The Examiner alleges that "the microphone is coupled to the at least one audio port of the infrared transmitter apparatus (Rybicki, Figure 1 #20) via an amplification circuit (Rybicki, Figure 1 #18) to provide the audio signal with a gain." (Final Rejection, page 7). However, the amplifier 18 of Rybicki receives encoded pulses from the modulator and the amplifier drives LED 20 to produce transmitted modulated pulses 28 (see column 4, line 60 through column 5, line 5). This is quite contrary to the present invention in which the amplification circuit provides the audio signal with a gain (e.g., the audio signal representative of a user's voice picked up by a microphone in the removable transmitter is provided with a gain) such that an audio signal of sufficient strength can be provided via the audio port of the removable transmitter to the audio port of the communication apparatus (e.g., the cellular phone port so that audio of sufficient strength can be provided to a person talking to the user of the hands-free portable communication system of the present invention). Rybicki does not include an amplification circuit that is connected in this manner to perform this function and there is nothing in the references cited that would suggest that such connectivity be carried out.

For at least the above reasons, claim 2 is not obvious in view of the cited references. Further, as claim 3 depends from claim 2, it includes the limitations thereof. As such, claim 3 is also not obvious over the cited references for the same reasons as provided above with respect to claim 2.

Dependent Claim 6

Dependent claim 6 is dependent on claim 1 and as such includes the limitations thereof. Therefore, claim 6 is also not obvious over the cited references for the same reasons as provided above with respect to claim 1. Further, dependent claim 6 describes that the receiver housing (e.g., receiver housing 929) may be an in the ear receiver housing securable within the concha of

the ear (e.g., an in the ear receiver housing securable within the concha of the ear such as shown in Figures 21A-21E and described with reference thereto at page 29, line 24 through page 30, line 11 of the specification).

The Examiner alleges that "the ear retaining portion terminates with a compactable and expandable material for insertion in the concha of an ear of a user (Ruppert, Fig. 1)" (Final Rejection, page 6). However, Ruppert does not describe an ear receiver housing that is formed to be self-supported by the ear of the user using an in the ear receiver housing securable within the concha of the ear. Rather, Ruppert describes a telephone headset 10 that includes an ear speaker 20 that is engaged within the mouthpiece 16 at the opposite end from the microphone 18. An ear cushion 21 is provided so that the microphone can be supported and seated ***against*** the ear of the user, not for insertion in the concha of an ear of a user or even self-supported by the ear of the user. The headband 12 is provided to be adjustable for supporting the headset and permit adjustment to accommodate the head of the user as the headset 10 is supported thereby.

For at least the above reasons, claim 6 is not obvious in view of the cited references.

Dependent Claim 7

Dependent claim 7 is dependent on claim 1 and as such includes the limitations thereof. Therefore, claim 7 is also not obvious over the cited references for the same reasons as provided above with respect to claim 1. Further, dependent claim 7 describes that the receiver housing (e.g., receiver housing 929) may be a behind the ear receiver housing securable by the pinna of the ear (e.g., such as housing 431 shown in Figure 12 and described at page 27, line 1 through page 28, line 11, or housing 929 with the ear retaining portion 928 as shown in Figure 21C and described at page 33, lines 2-10 of the specification).

The Examiner alleges that this is shown by Ruppert (Final Rejection, page 6). However, Ruppert does not describe an ear receiver housing that is formed to be self-supported by the ear of the user using a behind the ear receiver housing securable by the pinna of the ear. Rather, Ruppert only describes a headset a headband 12 for support.

For at least the above reasons, claim 7 is not obvious in view of the cited references.

Dependent Claims 36-37

Dependent claim 36 is dependent on claim 35 and as such includes the limitations thereof. Therefore, claim 36 is also not obvious over the cited references for the same reasons as provided above with respect to claim 35. Further, claim 36 describes that the microphone (e.g., microphone 823 of the transmitter apparatus 810) is coupled to the at least one audio port of the infrared transmitter apparatus (e.g., audio port 851 as shown in Figure 18B) via an amplification circuit (e.g., amplification circuit 753 as shown in Figure 17 and described at page 37, line 23 through page 38, line 4) to provide the audio signal with a gain (e.g., gain in the range of 2 to 20 as described in claim 37).

The Examiner alleges that "the microphone is coupled to the at least one audio port of the infrared transmitter apparatus (Rybicki, Figure 1 #20) via an amplification circuit (Rybicki, Figure 1 #18) to provide the audio signal with a gain." (Final Rejection, page 7). However, the amplifier 18 of Rybicki receives encoded pulses from the modulator and the amplifier drives LED 20 to produce transmitted modulated pulses 28 (see column 4, line 60 through column 5, line 5). This is quite contrary to the present invention in which the amplification circuit provides the audio signal with a gain (e.g., the audio signal representative of a user's voice picked up by a microphone in the removable transmitter is provided with a gain) such that an audio signal of sufficient strength can be provided via the audio port of the removable transmitter to the audio port of the communication apparatus (e.g., the cellular phone port so that audio of sufficient strength can be provided to a person talking to the user of the hands-free portable communication system of the present invention). Rybicki does not include an amplification circuit that is connected in this manner to perform this function and there is nothing in the references cited that would suggest that such connectivity be carried out.

For at least the above reasons, claim 36 is not obvious in view of the cited references. Further, as claim 37 depends from claim 36, it includes the limitations thereof. As such, claim 37 is also not obvious over the cited references for the same reasons as provided above with respect to claim 36.

Dependent Claim 40

Dependent claim 40 is dependent on claim 35 and as such includes the limitations thereof. Therefore, claim 40 is also not obvious over the cited references for the same reasons as provided above with respect to claim 35. Further, dependent claim 40 describes that the receiver housing (e.g., receiver housing 929) may be an in the ear receiver housing securable within the concha of the ear (e.g., an in the ear receiver housing securable within the concha of the ear such as shown in Figures 21A-21E and described with reference thereto at page 29, line 24 through page 30, line 11 of the specification).

The Examiner alleges that "the ear retaining portion terminates with a compactable and expandable material for insertion in the concha of an ear of a user (Ruppert, Fig. 1)" (Final Rejection, page 6). However, Ruppert does not describe an ear receiver housing that is formed to be self-supported by the ear of the user using an in the ear receiver housing securable within the concha of the ear. Rather, Ruppert describes a telephone headset 10 that includes an ear speaker 20 that is engaged within the mouthpiece 16 at the opposite end from the microphone 18. An ear cushion 21 is provided so that the microphone can be supported and seated ***against*** the ear of the user, not for insertion in the concha of an ear of a user or even self-supported by the ear of the user. The headband 12 is provided to be adjustable for supporting the headset and permit adjustment to accommodate the head of the user as the headset 10 is supported thereby.

For at least the above reasons, claim 40 is not obvious in view of the cited references.

Dependent Claim 41

Dependent claim 41 is dependent on claim 35 and as such includes the limitations thereof. Therefore, claim 41 is also not obvious over the cited references for the same reasons as provided above with respect to claim 35. Further, dependent claim 41 describes that the receiver housing (e.g., receiver housing 929) may be a behind the ear receiver housing securable by the pinna of the ear (e.g., such as housing 431 shown in Figure 12 and described at page 27, line 1

through page 28, line 11, or housing 929 with the ear retaining portion 928 as shown in Figure 21C and described at page 33, lines 2-10 of the specification).

The Examiner alleges that this is shown by Ruppert (Final Rejection, page 6). However, Ruppert does not describe an ear receiver housing that is formed to be self-supported by the ear of the user using a behind the ear receiver housing securable by the pinna of the ear. Rather, Ruppert only describes a headset that uses a headband 12 for support.

For at least the above reasons, claim 41 is not obvious in view of the cited references.

Independent Claim 17 (and Dependent Claims 20-22 and 24-26), and
Independent Claim 51 (and Dependent Claims 54-55 and 57-59)

Claim 17 recites a transmitter apparatus for use by a user with a communication apparatus (e.g., a phone) having an audio port. The apparatus includes at least one audio port configured to receive an audio signal representative of received audio input from the communication apparatus, modulation circuitry, and a microphone coupled to the at least one audio port of the transmitter apparatus and operable to generate an audio signal from received sound input of the user (e.g., a user talking hands-free). The audio signal generated from received sound input of the user is provided to the audio port of the communication apparatus via the audio port of the transmitter apparatus. Further, the apparatus includes a transmitter housing enclosing the modulation circuitry and the microphone. The transmitter housing is of a size smaller than the communication apparatus and configured to be removably coupled onto the communication apparatus.

Claim 51 includes similar components to claim 17 except that it is not focused on infrared. As such, the same arguments for patentability apply to claim 51 as set forth for claim 17.

The references cited do not teach or suggest all the limitations recited in claims 17 and 51

The references cited do not teach or suggest all the limitations recited in claims 17 and 51. For example, as acknowledged by the Examiner, May does not teach or suggest a

microphone coupled to the at least one audio port of the transmitter apparatus and operable to generate an audio signal from received sound input of the user. Further, as acknowledged by the Examiner, May does not describe that the audio signal generated from received sound input of the user (e.g., someone talking hands-free in a car) is provided to the audio port of the communication apparatus via the audio port of the transmitter apparatus. Yet further, as acknowledged by the Examiner, May does not teach or suggest a transmitter housing that encloses the modulation circuitry and the microphone; and which same transmitter housing is configured to be removably coupled onto the communication apparatus (e.g., May describes a removable battery pack that does not enclose a microphone).

The Examiner alleges that Ruppert describes "a microphone (Fig. 1#18) coupled to the at least one audio port of the infrared transmitter apparatus and operable to generate an audio signal from received sound input of the user, wherein the audio signal generated from received sound input of the user is provided to the audio port of the communication apparatus via the audio port of the infrared transmitter apparatus." (Final Rejection, page 5). However, Ruppert does not describe a microphone in a transmitter apparatus that has an audio port connected to an audio port of the communication apparatus (e.g., a phone) so the audio signal generated from received sound input of the user is provided to the audio port of the communication apparatus via the audio port of the transmitter apparatus. Rather, Ruppert teaches a microphone that is part of the receiver/transmitter headset and not a transmitter apparatus that is removably coupled to the communication apparatus (e.g., phone). As such, there is no communication from the microphone to the audio port of the transmitter apparatus to the audio port of the communication apparatus to which it is removably coupled. The most that Ruppert teaches is the use of a microphone in a receiver/transmitter headset and/or a microphone in a base station. Ruppert does not teach or suggest the use of a microphone in a transmitter apparatus that is removably coupled to the communication apparatus (e.g. the receiver/transmitter headset of May) as described according to the present invention.

Further, the Examiner alleges that Pieterse discloses "a removably coupled transmitter (2a of Figure 3) onto the communication apparatus." (Final Rejection, page 5). However,

Pieterse does not teach or suggest such a removably coupled transmitter. Pieterse only discloses a device that provides a means for exchanging data between the IC card and a remote terminal via a communication apparatus. It is unclear which portions of Figure 3 the Examiner asserts is removably coupling a transmitter to the communication apparatus. Appellants continue to assert that this element is not shown by Pieterse. The Examiner has failed to show with specificity which elements are alleged to be the removably coupled transmitter, and as such, Appellants have not had the ability to respond to a reasoned rejection.

Neither Rybicki, Weatherill, nor the other references cited, do anything to cure the lack of teaching or suggestion of the missing elements.

Lack of suggestion or motivation to combine the reference teachings

There is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the reference teachings of all of the cited references so as to arrive at the claimed invention. Particularly, there is nothing that would motivate one skilled in the art to modify May with the teachings of the other four (4) cited references so as to arrive at the present invention described in claims 17 and/or 51.

For example, as described herein, May describes a battery pack that is removably mounted on the back of a cellular phone. The battery pack contains an infrared port 51 for transmitting infrared information between the cellular phone and a computer (i.e., capable of sending and/or receiving infrared signals). A device interface 25 and passthru device interface 55 are connected to the infrared convertor 60 which converts electrical information to infrared information for transmission between the cellular phone and the computer via the infrared port 51. The passthru device interface 55 "allows conventional cellular phone accessories, such as a "hands free" kit, external antenna, external power, etc. to continue to work with the cellular phone 40." (See column 3, lines 1-20) The functions and configuration of the cellular phone of May are quite different than a transmitter that is removably coupled from a cellular phone to a receiver, so as to, for example, permit hands free communication between a communication

apparatus (e.g., a phone) and the receiver, as described in the pending claims. Rather, as stated in May, passthru device interface 55 "allows conventional cellular phone accessories, such as a "hands free" kit to work with the cellular phone 40. In other words, the device interface of May does not itself provide for hands free communication as described according to the present invention, just communication of information via infrared transmission between the cellular phone and a computer.

There is no microphone in the removable battery pack of May because it is not used to receive sound input from a user (e.g., in a handsfree communication situation) and there is no rationale reason to add such a microphone thereto because May itself states that such handsfree operation is provided in other ways and not by the device of May (see column 3, lines 1-20). As such, May also would not be modified to provide an audio signal generated from received sound input of the user (e.g., someone talking hands-free in a car) to the audio port of the communication apparatus via the audio port of the transmitter apparatus.

Yet, the Examiner continues to indicate that motivation and suggestion exists between all of the cited references such that they would be combined. Appellants traverse such an allegation and set forth that May, which describes an infrared communication technique between a cellular phone and a computer, would not be modified as alleged by the Examiner to include bits and pieces from four (4) other references that would incorporate functional components into May such as a transmitter that includes a microphone (e.g., a transmitter housing that is removably coupled from a communication apparatus (e.g., a cellular phone)) so as to, for example, permit hands free communication between a communication apparatus (e.g., a cellular phone) and a receiver as described in the pending claims. There is no rationale reason for modifying May in such a manner when May has no intention of ever providing the functionality between such a removable transmitter and an ear supported receiver. Clearly, the claimed invention is patentable over the cited references for lack of suggestion and motivation, as well as for failing to describe all the claim elements.

Yet further, the Examiner's citation and combination of five (5) references along with the lack of motivation clearly shows that the Examiner is doing nothing more than performing improper hindsight reconstruction of the claimed invention. The teaching or suggestion to make the combination and a reasonable expectation of success must both be found in the prior art, and not based on appellants' disclosure. To combine the teachings of all the references as alleged by the Examiner could hardly be expected to reasonably succeed. A reasonable expectation of success is necessary to establish a *prima facie* case of obviousness. See M.P.E.P. §2143.

For at least the above reasons, claims 17 and 51 are not obvious in view of the cited references. Further, as claims 20-22 and 24-26 depend on independent claim 17 and claims 54-55 and 57-59 depend on independent claim 51, either directly or indirectly, they include the limitations thereof. As such, these claims are also not obvious over the cited references for the same reasons as set forth for claims 17 and 51, respectively.

Dependent Claims 18-19

Dependent claim 18 is dependent on claim 17 and as such includes the limitations thereof. Therefore, claim 18 is also not obvious over the cited references for the same reasons as provided above with respect to claim 17. Further, claim 18 describes that the microphone (e.g., microphone 823 of the transmitter apparatus 810) is coupled to the at least one audio port of the infrared transmitter apparatus (e.g., audio port 851 as shown in Figure 18B) via an amplification circuit (e.g., amplification circuit 753 as shown in Figure 17 and described at page 37, line 23 through page 38, line 4) to provide the audio signal with a gain (e.g., gain in the range of 2 to 20 as described in claim 3).

The Examiner alleges that "the microphone is coupled to the at least one audio port of the infrared transmitter apparatus (Rybicki, Figure 1 #20) via an amplification circuit (Rybicki, Figure 1 #18) to provide the audio signal with a gain." (Final Rejection, page 7, claim 18 appears to be mistakenly written in the rejection on page 6). However, the amplifier 18 of Rybicki receives encoded pulses from the modulator and the amplifier drives LED 20 to produce

transmitted modulated pulses 28 (see column 4, line 60 through column 5, line 5). This is quite contrary to the present invention in which the amplification circuit provides the audio signal with a gain (e.g., the audio signal representative of a user's voice picked up by a microphone in the removable transmitter is provided with a gain) such that an audio signal of sufficient strength can be provided via the audio port of the removable transmitter to the audio port of the communication apparatus (e.g., the cellular phone port so that audio of sufficient strength can be provided to a person talking to the user of the hands-free portable communication system of the present invention). Rybicki does not include an amplification circuit that is connected in this manner to perform this function and there is nothing in the references cited that would suggest that such connectivity be carried out.

For at least the above reasons, claim 18 is not obvious in view of the cited references. Further, as claim 19 depends from claim 18, it includes the limitations thereof. As such, claim 19 is also not obvious over the cited references for the same reasons as provided above with respect to claim 18.

Dependent Claims 27-28

Dependent claim 27 is dependent on claim 17 and as such includes the limitations thereof. Therefore, claim 27 is also not obvious over the cited references for the same reasons as provided above with respect to claim 17. Further, claim 27 describes that the transmitter housing (e.g., transmitter housing 819 as shown in Figures 19A-19H) is configured to be removably coupled to a removable battery apparatus (e.g., battery apparatus 825 as shown in Figures 19A-19H and described at page 43, line 15 through page 45, line 15, such as a removable battery apparatus that is configured to receive at least one of button type batteries and cylindrical alkaline batteries as described therein and recited in claim 28).

The Examiner alleges that such a "receiver housing comprises an opening defined therein configured to receive a removable battery apparatus (e.g., May col./line: 3/25-30)" (Final Rejection, page 6). However, claim 27 is about a transmitter housing and not a "receiver

housing" as addressed in the rejection. Further, such columns or lines say nothing about being configured to receive a removable battery apparatus.

For at least the above reasons, claim 27 is not obvious in view of the cited references. Further, as claim 28 depends from claim 27, it includes the limitations thereof. As such, claim 28 is also not obvious over the cited references for the same reasons as provided above with respect to claim 27.

Dependent Claims 52-53

Dependent claim 52 is dependent on claim 51 and as such includes the limitations thereof. Therefore, claim 52 is also not obvious over the cited references for the same reasons as provided above with respect to claim 51. Further, claim 52 describes that the microphone (e.g., microphone 823 of the transmitter apparatus 810) is coupled to the at least one audio port of the infrared transmitter apparatus (e.g., audio port 851 as shown in Figure 18B) via an amplification circuit (e.g., amplification circuit 753 as shown in Figure 17 and described at page 37, line 23 through page 38, line 4) to provide the audio signal with a gain (e.g., gain in the range of 2 to 20 as described in claim 53).

The Examiner alleges that "the microphone is coupled to the at least one audio port of the infrared transmitter apparatus (Rybicki, Figure 1 #20) via an amplification circuit (Rybicki, Figure 1 #18) to provide the audio signal with a gain." (Final Rejection, page 7, claim 52 appears to be mistakenly written in the rejection about gain values on page 7). However, the amplifier 18 of Rybicki receives encoded pulses from the modulator and the amplifier drives LED 20 to produce transmitted modulated pulses 28 (see column 4, line 60 through column 5, line 5). This is quite contrary to the present invention in which the amplification circuit provides the audio signal with a gain (e.g., the audio signal representative of a user's voice picked up by a microphone in the removable transmitter is provided with a gain) such that an audio signal of sufficient strength can be provided via the audio port of the removable transmitter to the audio port of the communication apparatus (e.g., the cellular phone port so that audio of sufficient

strength can be provided to a person talking to the user of the hands-free portable communication system of the present invention). Rybicki does not include an amplification circuit that is connected in this manner to perform this function and there is nothing in the references cited that would suggest that such connectivity be carried out.

For at least the above reasons, claim 52 is not obvious in view of the cited references. Further, as claim 53 depends from claim 52, it includes the limitations thereof. As such, claim 53 is also not obvious over the cited references for the same reasons as provided above with respect to claim 52.

Dependent Claim 60

Dependent claim 60 is dependent on claim 51 and as such includes the limitations thereof. Therefore, claim 60 is also not obvious over the cited references for the same reasons as provided above with respect to claim 51. Further, claim 60 describes that the transmitter housing (e.g., transmitter housing 819 as shown in Figures 19A-19H) is configured to be removably coupled to a removable battery apparatus (e.g., battery apparatus 825 as shown in Figures 19A-19H and described at page 43, line 15 through page 45, line 15, such as a removable battery apparatus that is configured to receive at least one of button type batteries and cylindrical alkaline batteries).

The Examiner alleges that such a "receiver housing comprises an opening defined therein configured to receive a removable battery apparatus (e.g., May col./line: 3/25-30)" (Final Rejection, page 6). However, claim 60 is about a transmitter housing and not a "receiver housing" as addressed in the rejection. Further, such columns or lines say nothing about being configured to receive a removable battery apparatus.

For at least the above reasons, claim 60 is not obvious in view of the cited references.

Independent Claim 29 (and Dependent Claims 30, 32, and 33)

Independent claim 29 is directed to a method of using a portable communication system (e.g., system 700, such as shown in Figure 17 and described beginning at page 35, line 3 through

page 37, line 22 of the specification) with a phone apparatus (e.g., phone apparatus 804 as shown in Figure 18A) having an audio port (e.g., audio port 850 as shown in Figure 18B), wherein the method includes providing a removable transmitter (e.g., transmitter apparatus 712, such as the infrared transmitter apparatus 810 as shown in Figures 18 and 19). The transmitter (e.g., transmitter apparatus 810) includes at least one audio port (e.g., audio port 851 as shown in Figure 18B) configured to receive an audio signal representative of received audio input from the phone apparatus (e.g., audio signal from the cellular phone 804 provided to the infrared transmitter 810 via a wired connection 815 between the infrared transmitter 810 and the cellular phone apparatus 804, also shown in Figure 18B). The transmitter apparatus further includes a transmitter device (e.g., infrared light emitting device 821, such as LEDs). Further, the transmitter apparatus includes modulation circuitry (e.g., transmitter circuitry 898 as shown in Figure 19H) operable to convert the audio signal to one or more electrical pulses to drive the transmitter to transmit signals representative of the audio signals (e.g., as described with reference to Figure 2 at page 14, line 3 through page 16, line 21 of the specification). Still further, the transmitter includes a microphone (e.g., microphone 823) coupled to the at least one audio port (e.g., audio port 851 as shown in Figure 18B) of the removable transmitter and operable to generate an audio signal from received sound input of the user, wherein the audio signal generated from received sound input of the user is provided to the audio port of the phone (e.g., audio port or jack 850 of the cellular phone apparatus 804 as shown in Figure 18B) via the audio port (e.g., audio port 851 as shown in Figure 18B) of the transmitter.

A transmitter housing (e.g., housing 819) is provided that encloses the modulation circuitry (e.g., transmitter circuitry 898 as shown in Figure 19H) and the microphone (e.g., microphone 823). The transmitter housing (e.g., housing 819) is of a size smaller than the phone apparatus (e.g., cellular phone apparatus 804). The method further includes securing the removable transmitter onto the phone apparatus (e.g., securing the transmitter to the cellular phone apparatus 804, such as by an adhesive system, a mechanical attachment system, etc. as

described on page 42, lines 17-21 of the specification) (See also the method described at page 34, line 21 through page 35, line 2).

The references cited do not teach or suggest all the limitations recited in claim 29

The references cited do not teach or suggest all the limitations recited in claim 29. For example, as acknowledged by the Examiner, May does not teach or suggest a microphone coupled to the at least one audio port of the transmitter apparatus and operable to generate an audio signal from received sound input of the user. Further, as acknowledged by the Examiner, May does not describe that the audio signal generated from received sound input of the user (e.g., someone talking hands-free in a car) is provided to the audio port of the communication apparatus via the audio port of the transmitter apparatus. Yet further, as acknowledged by the Examiner, May does not teach or suggest a transmitter housing that encloses the modulation circuitry and the microphone; and which same transmitter housing is configured to be removably coupled onto the communication apparatus (e.g., May describes a removable battery pack that does not enclose a microphone).

The Examiner alleges that Ruppert describes "a microphone (Fig. 1#18) coupled to the at least one audio port of the infrared transmitter apparatus and operable to generate an audio signal from received sound input of the user, wherein the audio signal generated from received sound input of the user is provided to the audio port of the communication apparatus via the audio port of the infrared transmitter apparatus." (Final Rejection, page 5). However, Ruppert does not describe a microphone in a transmitter apparatus that has an audio port connected to an audio port of the communication apparatus (e.g., a phone) so the audio signal generated from received sound input of the user is provided to the audio port of the communication apparatus via the audio port of the transmitter apparatus. Rather, Ruppert teaches a microphone that is part of the receiver/transmitter headset and not a transmitter apparatus that is removably coupled to the communication apparatus (e.g., phone). As such, there is no communication from the microphone to the audio port of the transmitter apparatus to the audio port of the communication apparatus to which it is removably coupled. The most that Ruppert teaches is the use of a

microphone in a receiver/transmitter headset and/or a microphone in a base station. Ruppert does not teach or suggest the use of a microphone in a transmitter apparatus that is removably coupled to the communication apparatus (e.g. the receiver/transmitter headset of May) as described according to the present invention.

Further, the Examiner alleges that Pieterse discloses "a removably coupled transmitter (2a of Figure 3) onto the communication apparatus." (Final Rejection, page 5). However, Pieterse does not teach or suggest such a removably coupled transmitter. Pieterse only discloses a device that provides a means for exchanging data between the IC card and a remote terminal via a communication apparatus. It is unclear which portions of Figure 3 the Examiner asserts is removably coupling a transmitter to the communication apparatus. Appellants continue to assert that this element is not shown by Pieterse. The Examiner has failed to show with specificity which elements are alleged to be the removably coupled transmitter, and as such, Appellants have not had the ability to respond to a reasoned rejection.

Neither Rybicki, Weatherill, nor the other references cited, do anything to cure the lack of teaching or suggestion of the missing elements.

Lack of suggestion or motivation to combine the reference teachings

There is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the reference teachings of all of the cited references so as to arrive at the claimed invention. Particularly, there is nothing that would motivate one skilled in the art to modify May with the teachings of the other four (4) cited references so as to arrive at the present invention described in claim 29.

For example, as described herein, May describes a battery pack that is removably mounted on the back of a cellular phone. The battery pack contains an infrared port 51 for transmitting infrared information between the cellular phone and a computer (i.e., capable of sending and/or receiving infrared signals). A device interface 25 and passthru device interface 55 are connected to the infrared convertor 60 which converts electrical information to infrared

information for transmission between the cellular phone and the computer via the infrared port 51. The passthru device interface 55 "allows conventional cellular phone accessories, such as a "hands free" kit, external antenna, external power, etc. to continue to work with the cellular phone 40." (See column 3, lines 1-20). The functions and configuration of the cellular phone of May are quite different than a transmitter that is removably coupled from a cellular phone to a receiver, so as to, for example, permit hands free communication between a communication apparatus (e.g., a phone) and the receiver, as described in the pending claims. Rather, as stated in May, passthru device interface 55 "allows conventional cellular phone accessories, such as a "hands free" kit to work with the cellular phone 40. In other words, the device interface of May does not itself provide for hands free communication, just communication of information via infrared transmission between the cellular phone and a computer.

There is no microphone in the removable battery pack of May because it is not used to receive sound input from a user (e.g., in a handsfree communication situation) and there is no rationale reason to add such a microphone thereto because May itself states that such handsfree operation is provided in other ways and not by the device of May (see column 3, lines 1-20). As such, May also would not be modified to provide an audio signal generated from received sound input of the user (e.g., someone talking hands-free in a car) to the audio port of the communication apparatus via the audio port of the transmitter apparatus.

Yet, the Examiner continues to indicate that motivation and suggestion exists between all of the cited references such that they would be combined. Appellants traverse such allegation and set forth that May, which describes an infrared communication technique between a cellular phone and a computer, would not be modified as alleged by the Examiner to include bits and pieces from four (4) other references that would incorporate functional components into May such as a transmitter that includes a microphone (e.g., a transmitter housing that is removably coupled from a communication apparatus (e.g., a cellular phone)) so as to, for example, permit hands free communication between a communication apparatus (e.g., a cellular phone) and a receiver as described in the pending claims. There is no rationale reason for modifying May in

such a manner when May has no intention of ever providing the functionality between such a removable transmitter and an ear supported receiver. Clearly, the claimed invention is patentable over the cited references for lack of suggestion and motivation, as well as for failing to describe all the claim elements.

For at least the above reasons, claim 29 is not obvious in view of the cited references. Further, as claims 30, 32, and 33 depend on independent claim 29, either directly or indirectly, they include the limitations thereof. As such, these claims are also not obvious over the cited references for the same reasons as set forth for claim 29.

Dependent Claim 31

Dependent claim 31 is dependent on claim 29 and as such includes the limitations thereof. Therefore, claim 31 is also not obvious over the cited references for the same reasons as provided above with respect to claim 29. Further, claim 31 describes that the transmitter housing (e.g., transmitter housing 819 as shown in Figures 19A-19H) is configured to be removably coupled to a removable battery apparatus (e.g., battery apparatus 825 as shown in Figures 19A-19H and described at page 43, line 15 through page 45, line 15, such as a removable battery apparatus that is configured to receive at least one of button type batteries and cylindrical alkaline batteries). The method further includes providing the removable battery apparatus and coupling the removable battery apparatus to the transmitter housing when the transmitter housing is secured onto the phone apparatus (e.g., as described at page 45, lines 3-10).

The Examiner alleges that such a "receiver housing comprises an opening defined therein configured to receive a removable battery apparatus (e.g., May col./line: 3/25-30)" (Final Rejection, page 6). However, claim 31 is about a transmitter housing and not a "receiver housing" as addressed in the rejection. Further, such columns or lines say nothing about being configured to receive a removable battery apparatus.

For at least the above reasons, claim 31 is not obvious in view of the cited references.

Dependent Claim 33

Dependent claim 33 is dependent on claim 29 and as such includes the limitations thereof. Therefore, claim 33 is also not obvious over the cited references for the same reasons as provided above with respect to claim 29. Further, claim 33 describes that the method summarized with reference to claim 29 may include detaching the removable transmitter from the phone apparatus and securing the removable transmitter to a different phone apparatus (e.g., as described at page 34, line 21 through page 35, line 2).

The Examiner alleges that it is "extremely obvious that removable portable parts can be attached to similar devices" (Final Rejection, page 9). If it is so obvious that such a removable transmitter be used in such a manner then one of the 5 references cited against Appellant should have described such a use. However, such a use is not obvious because none of the references show a removable transmitter that is removable from one communication apparatus and secured to another (e.g., one phone to another).

For at least the above reasons, claim 34 is not obvious in view of the cited references.

Independent Claim 45 (and Dependent Claims 46 and 49-50)

Claim 45 recites a receiver apparatus that includes a detection device, a speaker, demodulation circuitry, and a receiver housing enclosing the speaker and the demodulation circuitry. Further, claim 45 recites a transmitter apparatus that includes at least one audio port configured to receive an audio signal representative of received audio input from the communication apparatus via a wired connection with the audio port of the communication apparatus, modulation circuitry, and a transmitter housing enclosing at least the modulation circuitry, wherein the transmitter housing is configured to be removably coupled onto the communication apparatus.

The references cited do not teach or suggest all the limitations recited in claim 45

The references cited do not teach or suggest all the limitations recited in claim 45. For example, May does not teach or suggest a transmitter housing that includes at least one audio

port configured to receive an audio signal representative of received audio input from the communication apparatus (e.g., cellular phone) via a wired connection with the audio port of the communication apparatus; which transmitter housing is configured to be removably coupled to the communication apparatus. The Examiner has not specifically addressed this limitation as being shown by any of the other references. It is noted that this limitation provides for communication of information from the communication apparatus (e.g., cellular phone) to the removable transmitter, and then, for example, to the receiver self-supported by the ear of the user. The wired connection between the removable transmitter and the audio port allows the removable transmitter to use audio ports that are available, on, for example, many cellular phones to connect and receive information from the, for example, cellular phone. Neither May, nor any of the other cited references, describe the use of such a wired connection for connection of a removable transmitter as described in the claims. Further, there is nothing in May or any of the other references that would motivate one to connect a removable transmitter to May as described in the claims because May is clearly focused on use of a removable battery pack for obtaining information from the cellular phone to transmit information to the computer.

For at least the above reasons, claim 45 is not obvious in view of the cited references. Further, as claims 46 and 49-50 depend on independent claim 45, either directly or indirectly, they include the limitations thereof. As such, these claims are also not obvious over the cited references for the same reasons as provided above with reference to claim 45.

Dependent Claim 47

Dependent claim 47 is dependent on claim 45 and as such includes the limitations thereof. Therefore, claim 47 is also not obvious over the cited references for the same reasons as provided above with respect to claim 45. Further, dependent claim 47 describes that the receiver housing (e.g., receiver housing 929) may be an in the ear receiver housing securable within the concha of the ear (e.g., an in the ear receiver housing securable within the concha of the ear such as shown in Figures 21A-21E and described with reference thereto at page 29, line 24 through page 30, line 11 of the specification).

The Examiner alleges that "the ear retaining portion terminates with a compactable and expandable material for insertion in the concha of an ear of a user (Ruppert, Fig. 1)" (Final Rejection, page 6). However, Ruppert does not describe an ear receiver housing that is formed to be self-supported by the ear of the user using an in the ear receiver housing securable within the concha of the ear. Rather, Ruppert describes a telephone headset 10 that includes an ear speaker 20 that is engaged within the mouthpiece 16 at the opposite end from the microphone 18. An ear cushion 21 is provided so that the microphone can be supported and seated ***against*** the ear of the user, not for insertion in the concha of an ear of a user or even self-supported by the ear of the user. The headband 12 is provided to be adjustable for supporting the headset and permit adjustment to accommodate the head of the user as the headset 10 is supported thereby.

For at least the above reasons, claim 47 is not obvious in view of the cited references.

Dependent Claim 48

Dependent claim 48 is dependent on claim 45 and as such includes the limitations thereof. Therefore, claim 48 is also not obvious over the cited references for the same reasons as provided above with respect to claim 45. Further, dependent claim 48 describes that the receiver housing (e.g., receiver housing 929) may include a supporting ear hook extending therefrom.

The Examiner alleges that this shown by Ruppert (Final Rejection, page 6). However, Ruppert does not describe an ear receiver housing that is formed to be self-supported by the ear of the user using a supporting ear hook. Rather, Ruppert only describes a headset supported with use of a headband 12.

For at least the above reasons, claim 48 is not obvious in view of the cited references.

Independent Claim 61 (and Dependent Claims 64 and 67-68)

Claim 61 describes a portable receiver apparatus that includes a detection device to detect one or more pulses and generate one or more electrical signals representative of the detected pulses, a speaker, and demodulation circuitry operable to convert the one or more electrical

signals representative of the detected pulses to an audio signal to power the speaker to produce a sound output. The demodulation circuitry includes pulse detection circuitry, pulse width convertor circuitry, and pulse width demodulation circuitry. A housing encloses at least the speaker and the demodulation circuitry, wherein the housing is formed to be self-supported by the ear of a user.

Lack of suggestion or motivation to combine the reference teachings

There is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the reference teachings of all of the cited references so as to arrive at the claimed invention as described in claim 61. Particularly, there is nothing that would motivate one skilled in the art to modify May with the teachings of the other four (4) cited references so as to arrive at the present invention.

For example, May describes a battery pack that is removably mounted on the back of a cellular phone. The battery pack contains an infrared port 51 for transmitting infrared information between the cellular phone and a computer (i.e., capable of sending and/or receiving infrared signals). A device interface 25 and passthru device interface 55 are connected to the infrared convertor 60 which converts electrical information to infrared information for transmission between the cellular phone and the computer via the infrared port 51. The passthru device interface 55 "allows conventional cellular phone accessories, such as a "hands free" kit, external antenna, external power, etc., to continue to work with the cellular phone 40." (See column 3, lines 1-20) The functions and configuration of the cellular phone of May are quite different than a receiver that is to be self supported by the ear of a user and configured with an appropriate demodulation scheme to receive information from a transmitter (e.g., removably coupled onto a cellular phone), so as to, for example, permit hands free communication between a phone and the receiver. Rather, May just provides for communication of information via infrared transmission between the cellular phone and a computer.

No wireless communication from the cellular phone to a receiver supported by the ear of a user is described by May. This is clearly recognized by the Examiner in the Office Action

which has acknowledged that May clearly is lacking a substantial number of elements in the pending claims, including, for example, a receiver apparatus that includes a detection device, a speaker, demodulation circuitry, and a receiver housing enclosing the speaker and the demodulation circuitry; which receiver housing is formed to be self-supported by the ear of the user.

Yet, the Examiner indicates that there is motivation and suggestion to combine all of the cited references. Appellants traverse such allegation and set forth that May, which describes an infrared communication technique between a cellular phone and a computer, would not be modified as alleged by the Examiner to include bits and pieces from four (4) other references to add the functionality of a receiver to May that is to be self supported by the ear of a user, in addition to the use of a demodulation technique that allows such a receiver to be supported by the ear of the user so as to, for example, permit hands free communication between a cellular phone and the receiver. In other words, there is no motivation to modify May so as to attain the invention as described in the pending claim 61. For example, the configuration and functionality of an ear supported receiver (e.g., an infrared receiver) using the modulation techniques described therein is no easy task to design. This is particularly the case when low power is required to maintain a small battery size and lengthen the life of the battery as well in an ear supported receiver. The five (5) references cited by the Examiner, and particularly when May is alleged to be modified, could not have given any person skilled in the art a reasonable expectation that a combination of such references would result in success of such a receiver.

For at least the above reasons, claim 61 is not obvious in view of the cited references. Further, as claims 64 and 67-68 depend on independent claim 61, either directly or indirectly, they include the limitations thereof. As such, these claims are also not obvious over the cited references for the same reasons as provided above.

Dependent Claim 62

Dependent claim 62 is dependent on claim 61 and as such includes the limitations thereof. Therefore, claim 62 is also not obvious over the cited references for the same reasons as

provided above with respect to claim 61. Further, dependent claim 62 describes that the housing (e.g., receiver housing 929 as shown in Figures 21A-21E) may include a body portion (e.g., body portion 922) extending from a first end to a second end along a body portion axis (e.g., axis 923) to enclose at least a portion of the demodulation circuitry (e.g., circuitry 944 as shown in Figure 21E), and an ear retaining portion (e.g., ear retaining portion 928) enclosing the speaker (e.g., speaker 942), wherein the ear retaining portion (e.g., ear retaining portion 928) extends from the first end of the body portion (e.g., body portion 922) along an axis (e.g., axis 931) of predominate sound direction of the speaker (e.g., speaker 942) that is orthogonal to the body portion axis (e.g., axis 923). The ear retaining portion (e.g., ear retaining portion 928) includes a compactable and expandable material (e.g., material 959) for insertion in the concha of the ear (e.g., as described at page 29, line 12 through page 30, line 11).

The Examiner alleges that this is shown by Ruppert (Final Rejection, page 6) in that "the ear retaining portion terminates with a compactable and expandable material for insertion in the concha of an ear of a user (Ruppert, Fig. 1); and a body portion extending from a first end (#35) to a second end along a body portion axis (#16), wherein the ear retaining portion extends from the first end of the body portion along an axis of predominate sound direction of the speaker that is orthogonal to the body portion axis."

However, Ruppert does not describe an ear receiver housing that includes an ear retaining portion to provide for a receiver that is self-supported by the ear of the user, let alone the specific structure set out in claim 62. Rather, Ruppert describes a telephone headset 10 that includes an ear speaker 20 that is engaged within the mouthpiece 16 at the opposite end from the microphone 18. An ear cushion 21 is provided so that the microphone can be supported and seated ***against*** the ear of the user, not for insertion in the concha of an ear of a user or even self-supported by the ear of the user. The headband 12 is provided to be adjustable for supporting the headset and permit adjustment to accommodate the head of the user as the headset 10 is supported thereby.

For at least the above reasons, claim 62 is not obvious in view of the cited references.

Dependent Claim 63

Dependent claim 63 is dependent on claim 61 and as such includes the limitations thereof. Therefore, claim 63 is also not obvious over the cited references for the same reasons as provided above with respect to claim 61. Further, dependent claim 63 describes that the body portion (e.g., body portion 922) includes at least one surface (e.g., surface 997 in Figure 21E) that lies a certain distance from the body portion axis (e.g., axis 923) in the direction of extension of the ear retention portion (e.g., ear retaining portion 928), and further wherein the compactable and expandable material (e.g., material 959) of the ear retaining portion (e.g., ear retaining portion 928) is positioned a further distance from the body portion axis (e.g., axis 923) than the at least one surface (e.g., surface 997 in Figure 21E) of the body portion (e.g., body portion 922) (e.g., as described at page 31, lines 3-18).

The Examiner alleges that this shown by Ruppert (Final Rejection, page 6) in that "the ear retaining portion terminates with a compactable and expandable material for insertion in the concha of an ear of a user (Ruppert, Fig. 1); and a body portion extending from a first end (#35) to a second end along a body portion axis (#16), wherein the ear retaining portion extends from the first end of the body portion along an axis of predominate sound direction of the speaker that is orthogonal to the body portion axis."

However, Ruppert does not describe an ear receiver housing that includes an ear retaining portion to provide for a receiver that is self-supported by the ear of the user, let alone the specific structure set out in claim 63. Rather, Ruppert describes a telephone headset 10 that includes an ear speaker 20 that is engaged within the mouthpiece 16 at the opposite end from the microphone 18. An ear cushion 21 is provided so that the microphone can be supported and seated ***against*** the ear of the user, not for insertion in the concha of an ear of a user or even self-supported by the ear of the user. The headband 12 is provided to be adjustable for supporting the headset and permit adjustment to accommodate the head of the user as the headset 10 is supported thereby.

For at least the above reasons, claim 63 is not obvious in view of the cited references.

Dependent Claims 65-66

Dependent claim 65 is dependent on claim 61 and as such includes the limitations thereof. Therefore, claim 65 is also not obvious over the cited references for the same reasons as provided above with respect to claim 61. Further, dependent claim 65 describes that the receiver housing includes an opening (e.g., opening 936 as shown in Figure 21B) defined therein and configured to receive a removable battery apparatus (e.g., battery holding portion 930 as described at page 31, lines 19-25). Dependent claim 66 is directed to a retaining structure (e.g., retaining structure 697 and 677 in the opening 936) to secure the removable battery apparatus (e.g., battery holding portion 930 as described at page 31, lines 19-25) in the opening (e.g., opening 936).

The Examiner alleges that such a "receiver housing comprises an opening defined therein configured to receive a removable battery apparatus (e.g., May col./line: 3/25-30)" (Final Rejection, page 6). However, such columns or lines say nothing about being configured to receive a removable battery apparatus. Further, such columns or lines say nothing about a retaining structure in the opening.

For at least the above reasons, claim 65 is not obvious in view of the cited references. Further, as claim 66 depends from claim 65, it includes the limitations thereof. As such, claim 66 is also not obvious over the cited references for the same reasons as provided above with respect to claim 65.

Independent Claim 69 (and Dependent Claims 73-74)

Claim 69 recites a receiver apparatus that includes an infrared light detection device, a speaker, demodulation circuitry, and an ear retaining structure that encloses the speaker. The receiver housing is formed to be self-supported by the ear of the user, and in particular, the ear retaining structure is configured for insertion into the concha of the ear.

The references cited do not teach or suggest all the limitations recited in claim 69. For example, as acknowledged by the Examiner, May does not teach or suggest a receiver apparatus

that includes a detection device, a speaker, demodulation circuitry, and a receiver housing enclosing the speaker; wherein the receiver housing is formed to be self-supported by the ear of the user. Further, clearly, May does not teach such an ear self-supported retaining structure that is configured for insertion into the concha of the ear.

The Examiner alleges that Ruppert discloses a "compactable and expandable material for insertion in the concha of an ear of a user (Ruppert, Fig. 1); and a body portion extending from a first end (#35) to a second end along a body portion axis (#16), wherein the ear retaining portion extends from the first end of the body portion along an axis of predominate sound direction of the speaker that is orthogonal to the body portion axis." (Final Rejection, page 6 and 7). However, Ruppert does not teach or suggest such elements. Rather, Ruppert describes a telephone headset 10 that includes an ear speaker 20 that is engaged within the mouthpiece 16 at the opposite end from the microphone 18. An ear cushion 21 is provided so that the microphone can be supported and seated ***against*** the ear of the user, not for insertion in the concha of an ear of a user or even self-supported by the ear of the user (see column 4, line 10-22). The headband 12 is provided to be adjustable for supporting the headset and permit adjustment to accommodate the head of the user as the headset 10 is supported thereby.

Neither Weatherill, Pieterse, Rybicki, nor any of the other references cited, do anything to cure the lack of teaching or suggestion of the missing elements.

For at least the above reasons, claim 69 is not obvious in view of the cited references. Further, as claims 73-74 depend on independent claim 69, either directly or indirectly, they include the limitations thereof. As such, these claims are also not obvious over the cited references for the same reasons as provided above.

Dependent Claim 70

Dependent claim 70 is dependent on claim 69 and as such includes the limitations thereof. Therefore, claim 70 is also not obvious over the cited references for the same reasons as provided above with respect to claim 69. Further, dependent claim 70 describes that the body

portion (e.g., body portion 922) includes at least one surface (e.g., surface 997 in Figure 21E) that lies a certain distance from the body portion axis (e.g., axis 923) in the direction of extension of the ear retention portion (e.g., ear retaining portion 928), and further wherein the compactable and expandable material (e.g., material 959) of the ear retaining portion (e.g., ear retaining portion 928) is positioned a further distance from the body portion axis (e.g., axis 923) than the at least one surface (e.g., surface 997 in Figure 21E) of the body portion (e.g., body portion 922) (e.g., as described at page 31, lines 3-18).

The Examiner alleges that this is shown by Ruppert (Final Rejection, page 6) in that "the ear retaining portion terminates with a compactable and expandable material for insertion in the concha of an ear of a user (Ruppert, Fig. 1); and a body portion extending from a first end (#35) to a second end along a body portion axis (#16), wherein the ear retaining portion extends from the first end of the body portion along an axis of predominate sound direction of the speaker that is orthogonal to the body portion axis."

However, Ruppert does not describe an ear receiver housing that includes an ear retaining portion to provide for a receiver that is self-supported by the ear of the user, let alone the specific structure set out in claim 70. Rather, Ruppert only describes a headset with a headband 12 for support.

For at least the above reasons, claim 70 is not obvious in view of the cited references.

Dependent Claims 71-72

Dependent claim 71 is dependent on claim 69 and as such includes the limitations thereof. Therefore, claim 71 is also not obvious over the cited references for the same reasons as provided above with respect to claim 69. Further, dependent claim 71 describes that the receiver housing includes an opening (e.g., opening 936 as shown in Figure 21B) defined therein and configured to receive a removable battery apparatus (e.g., battery holding portion 930 as described at page 31, lines 19-25). Dependent claim 72 is directed to a retaining structure (e.g., retaining structure 697 and 677 in the opening 936) to secure the removable battery apparatus

(e.g., battery holding portion 930 as described at page 31, lines 19-25) in the opening (e.g., opening 936).

The Examiner alleges that such a "receiver housing comprises an opening defined therein configured to receive a removable battery apparatus (e.g., May col./line: 3/25-30)" (Final Rejection, page 6). However, such columns or lines say nothing about being configured to receive a removable battery apparatus. Further, such columns or lines say nothing about a retaining structure in the opening.

For at least the above reasons, claim 71 is not obvious in view of the cited references. Further, as claim 72 depends from claim 71, it includes the limitations thereof. As such, claim 72 is also not obvious over the cited references for the same reasons as provided above with respect to claim 71.

Independent Claim 75 (and Dependent Claim 78)

Claim 75 recites a receiver apparatus that includes an infrared light detection device, a speaker, demodulation circuitry, and an ear retaining structure that encloses the speaker. The receiver housing is formed to be self-supported by the ear of the user, and in particular, the ear retaining structure is configured for insertion into the concha of the ear.

The references cited do not teach or suggest all the limitations recited in claim 75. For example, as acknowledged by the Examiner, May does not teach or suggest a receiver apparatus that includes a detection device, a speaker, demodulation circuitry, and a receiver housing enclosing the speaker; wherein the receiver housing is formed to be self-supported by the ear of the user. Further, clearly, May does not teach such an ear self-supported retaining structure that is configured for insertion into the concha of the ear.

The Examiner alleges that Ruppert discloses a "compactable and expandable material for insertion in the concha of an ear of a user (Ruppert, Fig. 1); and a body portion extending from a first end (#35) to a second end along a body portion axis (#16), wherein the ear retaining portion extends from the first end of the body portion along an axis of predominate sound direction of

the speaker that is orthogonal to the body portion axis." (Final Rejection, page 5). However, Ruppert does not teach or suggest such elements. Rather, Ruppert describes a telephone headset 10 that includes an ear speaker 20 that is engaged within the mouthpiece 16 at the opposite end from the microphone 18. An ear cushion 21 is provided so that the microphone can be supported and seated ***against*** the ear of the user, not for insertion in the concha of an ear of a user or even self-supported by the ear of the user. The headband 12 is provided to be adjustable for supporting the headset and permit adjustment to accommodate the head of the user as the headset 10 is supported thereby.

Neither Weatherill, Pieterse, Rybicki, nor any of the other references cited, do anything to cure the lack of teaching or suggestion of the missing elements.

For at least the above reasons, claim 75 is not obvious in view of the cited references. Further, as claim 78 depends on respective independent claim 75, it includes the limitations thereof. As such, these claims are also not obvious over the cited references for the same reasons as provided above.

Dependent Claims 76-77

Dependent claim 76 is dependent on claim 75 and as such includes the limitations thereof. Therefore, claim 76 is also not obvious over the cited references for the same reasons as provided above with respect to claim 75. Further, dependent claim 76 describes that the receiver housing includes means for receiving a removable battery apparatus (e.g., opening 936 as shown in Figure 21B configured to receive battery holding portion 930 as described at page 31, lines 19-25). Dependent claim 77 is directed to a retaining means (e.g., retaining structure 697 and 677 in the opening 936) to secure the removable battery apparatus (e.g., battery holding portion 930 as described at page 31, lines 19-25).

The Examiner alleges that such a "receiver housing comprises an opening defined therein configured to receive a removable battery apparatus (e.g., May col./line: 3/25-30)" (Final Rejection, page 6). However, such columns or lines say nothing about being configured to

receive a removable battery apparatus. Further, such columns or lines say nothing about a retaining structure in the opening.

For at least the above reasons, claim 76 is not obvious in view of the cited references. Further, as claim 77 depends from claim 76, it includes the limitations thereof. As such, claim 77 is also not obvious over the cited references for the same reasons as provided above with respect to claim 76.

SECOND GROUND OF REJECTION

Claims 11, 13, 23, and 56 are not unpatentable over May, Rybicki, Ruppert, Pieterse and Weatherill as applied to claims 1, 17, and 51, and in further view of Noetzel

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references must teach or suggest all the claim limitations. See M.P.E.P. §2143.

"To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." M.P.E.P. §2143.03, *citing, In re Royka*, 490 F.2d 981, 180 U.S.P.Q. (BNA) 580 (CCPA1974).

"Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so." M.P.E.P. §2143.01, *citing In re Kahn*, 441 F.3d 977, 986, 78 USPQ2d 1329, 1335 (Fed. Cir. 2006) (discussing rationale underlying the motivation-suggestion-teaching requirement as a guard against using hindsight in an obviousness analysis).

Appellant asserts that, as set forth below with reference to each separately identified individual claim and/or group of claims, the Examiner has failed to establish a *prima facie* case

of obviousness of claims 11, 13, 23, and 56 under 35 U.S.C. §103 as being unpatentable over May, Rybicki, Ruppert, Pieterse, and Weatherill as applied to claims 1, 17, and 51 above, and in further view of Noetzel (U.S. Patent No. 4,980,926 A) for at least the reason that the combination fails to teach or suggest all limitations of Appellant's claims, and further that there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the reference teachings of all of the cited references so as to arrive at the claimed invention.

Dependent Claim 11

Dependent claim 11 is dependent on independent claim 1, indirectly, and as such includes the limitations thereof. Therefore, claim 11 is not obvious over the cited references for the same reasons as provided above with respect to claim 1. Further, dependent claim 11 describes that the modulation circuitry (e.g., transmitter circuitry 898 as shown in Figure 19H) includes voice activated power up circuitry (e.g., sound activated power up circuitry as described at page 17, lines 1-11).

The Examiner alleges that this shown by Noetzel (e.g., col./line: 4/45-60) and that it would have been obvious "to voice activate the modulation circuitry from an idle mode as a convenience for the user to avoid having to locate and press activation buttons." (Final Rejection, page 9).

However, Noetzel describes at col./line: 4/45-60 that the transmitter unit has a timer switch and that "[r]ather than have the transmitter unit 10 be voice activated, it is designed to continually operate for only a set period of time after manual activation in order to extend the life of the battery . . [a] voice activated transmitter may draw power from the battery 16 even when the mask is not in use . . . when the unit is not in use power is not drawn from the battery 16."

As such, Noetzel actually teaches away from use of voice activated power up circuitry (e.g., no power is drawn as it is not in idle mode but rather turned off and on for a timed period).

Clearly Noetzel does not teach or suggest that one use such circuitry in a transmitter such as described in the pending claims.

For at least the above reasons, claim 11 is not obvious in view of the cited references.

Dependent Claim 13

Dependent claim 13 is dependent on independent claim 1, indirectly, and as such includes the limitations thereof. Therefore, claim 13 is not obvious over the cited references for the same reasons as provided above with respect to claim 1. Further, dependent claim 13 describes that the demodulation circuitry (e.g., circuitry 944) includes at least amplification circuitry always operable in power-on idle mode when battery devices are connected for operation of the infrared receiver apparatus.

The Examiner alleges that this is shown by Noetzel (e.g., col./line: 4/45-60) and that it would have been obvious "to voice activate the modulation circuitry from an idle mode as a convenience for the user to avoid having to locate and press activation buttons." (Final Rejection, page 9).

First, Noetzel does not describe demodulation circuitry (e.g., circuitry 944) that includes at least amplification circuitry always operable in power-on idle mode when battery devices are connected for operation of the infrared receiver apparatus. Further, rather than operate in any power-on idle mode, Noetzel describes at col./line: 4/45-60 that the transmitter unit has a timer switch and that "[r]ather than have the transmitter unit 10 be voice activated, it is designed to continually operate for only a set period of time after manual activation in order to extend the life of the battery . . [a] voice activated transmitter may draw power from the battery 16 even when the mask is not in use . . . when the unit is not in use power is not drawn from the battery 16." As such, Noetzel actually teaches away from use of a power on idle mode in the receiver such as that described in the pending claims.

For at least the above reasons, claim 13 is not obvious in view of the cited references.

Dependent Claim 23

Dependent claim 23 is dependent on independent claim 17, indirectly, and as such includes the limitations thereof. Therefore, claim 23 is not obvious over the cited references for the same reasons as provided above with respect to claim 17. Further, dependent claim 23 describes that the modulation circuitry (e.g., transmitter circuitry 898 as shown in Figure 19H) includes voice activated power up circuitry (e.g., sound activated power up circuitry as described at page 17, lines 1-11).

The Examiner alleges that this is shown by Noetzel (e.g., col./line: 4/45-60) and that it would have been obvious "to voice activate the modulation circuitry from an idle mode as a convenience for the user to avoid having to locate and press activation buttons." (Final Rejection, page 9).

However, Noetzel describes at col./line: 4/45-60 that the transmitter unit has a timer switch and that "[r]ather than have the transmitter unit 10 be voice activated, it is designed to continually operate for only a set period of time after manual activation in order to extend the life of the battery . . [a] voice activated transmitter may draw power from the battery 16 even when the mask is not in use . . . when the unit is not in use power is not drawn from the battery 16."

As such, Noetzel actually teaches away from use of voice activated power up circuitry (e.g., no power is drawn as it is not in idle mode but rather turned off and on for a timed period). Clearly, Noetzel does not teach or suggest that one use such circuitry in a transmitter such as that described in the pending claims.

For at least the above reasons, claim 23 is not obvious in view of the cited references.

Dependent Claim 56

Dependent claim 56 is dependent on independent claim 51, indirectly, and as such includes the limitations thereof. Therefore, claim 56 is not obvious over the cited references for the same reasons as provided above with respect to claim 51. Further, dependent claim 56

describes that the demodulation circuitry (e.g., circuitry 944) includes at least amplification circuitry always operable in power-on idle mode when battery devices are connected for operation of the infrared receiver apparatus.

The Examiner alleges that this is shown by Noetzel (e.g., col./line: 4/45-60) and that it would have been obvious "to voice activate the modulation circuitry from an idle mode as a convenience for the user to avoid having to locate and press activation buttons." (Final Rejection, page 9).

First, Noetzel does not describe demodulation circuitry (e.g., circuitry 944) that includes at least amplification circuitry always operable in power-on idle mode when battery devices are connected for operation of the infrared receiver apparatus. Further, rather than operate in any power-on idle mode, Noetzel describes at col./line: 4/45-60 that the transmitter unit has a timer switch and that "[r]ather than have the transmitter unit 10 be voice activated, it is designed to continually operate for only a set period of time after manual activation in order to extend the life of the battery . . [a] voice activated transmitter may draw power from the battery 16 even when the mask is not in use . . . when the unit is not in use power is not drawn from the battery 16." As such, Noetzel actually teaches away from use of a power on idle mode in the receiver such as that described in the pending claims.

For at least the above reasons, claim 56 is not obvious in view of the cited references.

VIII. SUMMARY

For the foregoing reasons, Appellant respectfully requests that the Board review and reverse the rejection of claims 1-78 as discussed herein and that notification of the allowance of these claims be issued.

Respectfully submitted
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The undersigned hereby certifies that this paper is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR §1.10 on the date indicated above and is addressed to Commissioner for Patents, Mail Stop - Appeal Brief - Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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CLAIMS APPENDIX

Serial No. 09/826,394

Docket No. 316.0010 0120 *(formerly 129.00100120)*

Claims 1-78 are provided below.

1. **(Rejected)** A portable communication system for use by a user with a communication apparatus having an audio port, the system comprising:

an infrared transmitter apparatus, wherein the infrared transmitter apparatus comprises:

at least one audio port configured to receive an audio signal representative of received audio input from the communication apparatus,

at least one infrared light emitting device,

modulation circuitry operable to convert the audio signal to one or more constant width electrical pulses to drive the infrared light emitting device to transmit one or more corresponding constant width infrared pulses,

a microphone coupled to the at least one audio port of the infrared transmitter apparatus and operable to generate an audio signal from received sound input of the user, wherein the audio signal generated from received sound input of the user is provided to the audio port of the communication apparatus via the audio port of the infrared transmitter apparatus, and

a transmitter housing enclosing the modulation circuitry and the microphone and upon which the at least one infrared light emitting device is mounted, wherein the transmitter housing is of a size smaller than the communication apparatus and configured to be removably coupled onto the communication apparatus; and

an infrared receiver apparatus, wherein the infrared receiver apparatus comprises:

an infrared light detection device to detect the one or more corresponding constant width infrared pulses and generate one or more electric signals representative of the detected infrared pulses,

a speaker,

demodulation circuitry operable to convert the one or more electric signals representative of the detected infrared pulses to an audio signal to power the speaker to produce a sound output, and

a receiver housing enclosing the speaker and the demodulation circuitry and upon which the infrared light detection device is mounted, wherein the receiver housing is formed to be self-supported by the ear of the user.

2. **(Rejected)** The system of claim 1, wherein the microphone is coupled to the at least one audio port of the infrared transmitter apparatus via an amplification circuit to provide the audio signal with a gain.

3. **(Rejected)** The system of claim 2, wherein the gain is in the range of 2 to 20.

4. **(Rejected)** The system of claim 1, wherein the transmitter housing comprises means for removably attaching the transmitter housing to the communication apparatus.

5. **(Rejected)** The system of claim 4, wherein the transmitter housing is removably coupled onto the communication apparatus by a two faced adhering system.

6. **(Rejected)** The system of claim 1, wherein the receiver housing comprises an in the ear receiver housing securable within the concha of the ear.

7. **(Rejected)** The system of claim 1, wherein the receiver housing comprises a behind the ear receiver housing securable by the pinna of the ear.

8. **(Rejected)** The system of claim 1, wherein the at least one audio port of the transmitter apparatus configured to receive an audio signal representative of received audio input from the

communication apparatus comprises an audio port configured for wired connection to the audio port of the communication apparatus.

9. **(Rejected)** The system of claim 8, wherein the communication apparatus is a phone apparatus having a microphone/speaker audio port, and further wherein the audio port of the transmitter apparatus is configured for wired connection to the microphone/speaker audio port by a cord/plug connector apparatus.

10. **(Rejected)** The system of claim 1, wherein the modulation circuitry comprises:

pulse width modulation circuitry to convert the audio signal using a carrier signal to one or more width modulated pulses, wherein the width of the one or more pulses is varied as a function of the audio signal;

an edge detect circuit to detect the edges of the one or more width modulated pulses and generate constant width pulses based on the detected edges; and

a pulse driver circuit to drive the infrared light emitting device.

11. **(Rejected)** The system of claim 10, wherein the modulation circuitry comprises voice activated power up circuitry.

12. **(Rejected)** The system of claim 1, wherein demodulation circuitry comprises:

pulse detection circuitry to convert the one or more electrical signals representative of the detected infrared pulses to one or more constant width pulses based thereon;

pulse width convertor circuitry to convert the one or more constant width pulses to one or more width modulated pulses; and

pulse width demodulation circuitry to convert the one or more width modulated pulses to an audio signal for application to the speaker.

13. **(Rejected)** The system of claim 12, wherein the demodulation circuitry comprises at least amplification circuitry always operable in power-on idle mode when battery devices are connected for operation of the infrared receiver apparatus.

14. **(Rejected)** The system of claim 1, wherein the size of the transmitter housing comprises a volume less than about 5 cm^3.

15. **(Rejected)** The system of claim 1, wherein the transmitter housing is configured to be removably coupled to a removable battery apparatus.

16. **(Rejected)** The system of claim 15, wherein the removable battery apparatus is configured to receive at least one of button type batteries and cylindrical alkaline batteries.

17. **(Rejected)** A portable transmitter apparatus for use by a user with a communication apparatus having an audio port, the apparatus comprising:

at least one audio port configured to receive an audio signal representative of received audio input from the communication apparatus;

at least one infrared light emitting device;

modulation circuitry operable to convert the audio signal to one or more constant width electrical pulses to drive the infrared light emitting device to transmit one or more corresponding constant width infrared pulses;

a microphone coupled to the at least one audio port of the transmitter apparatus and operable to generate an audio signal from received sound input of the user, wherein the audio signal generated from received sound input of the user is provided to the audio port of the communication apparatus via the audio port of the transmitter apparatus; and

a transmitter housing enclosing the modulation circuitry and the microphone and upon which the at least one infrared light emitting device is mounted, wherein the transmitter housing

is of a size smaller than the communication apparatus and configured to be removably coupled onto the communication apparatus.

18. **(Rejected)** The apparatus of claim 17, wherein the microphone is coupled to the at least one audio port of the transmitter apparatus via an amplification circuit to provide the audio signal with a gain.

19. **(Rejected)** The apparatus of claim 18, wherein the gain is in the range of 2 to 20.

20. **(Rejected)** The apparatus of claim 17, wherein the transmitter housing comprises means for removably attaching the transmitter housing to a phone apparatus.

21. **(Rejected)** The apparatus of claim 20, wherein the transmitter housing is removably coupled onto the communication apparatus by a two faced adhering system.

22. **(Rejected)** The apparatus of claim 17, wherein the modulation circuitry comprises:

pulse width modulation circuitry to convert the audio signal using a carrier signal to one or more width modulated pulses, wherein the width of the one or more pulses is varied as a function of the audio signal;

an edge detect circuit to detect the edges of the one or more width modulated pulses and generating constant width pulses based on the detected edges; and

a pulse driver circuit to drive the infrared light emitting device.

23. **(Rejected)** The apparatus of claim 22, wherein the modulation circuitry comprises voice activated power up circuitry.

24. **(Rejected)** The apparatus of claim 17, wherein the at least one audio port of the transmitter apparatus configured to receive an audio signal representative of received audio input from the communication apparatus comprises an audio port configured for wired connection to the audio port of the communication apparatus.

25. **(Rejected)** The apparatus of claim 24, wherein the communication apparatus is a phone apparatus having a microphone/speaker audio port, and further wherein the audio port of the transmitter apparatus is configured for wired connection to the microphone/speaker audio port by a cord/plug connector apparatus.

26. **(Rejected)** The apparatus of claim 17, wherein the size of the transmitter housing comprises a volume less than about 5 cm^3.

27. **(Rejected)** The apparatus of claim 17, wherein the transmitter housing is configured to be removably coupled to a removable battery apparatus.

28. **(Rejected)** The apparatus of claim 27, wherein the removable battery apparatus is configured to receive at least one of button type batteries and cylindrical alkaline batteries.

29. **(Rejected)** A method of using a portable communication system with a phone apparatus having an audio port, the method comprising:

providing a removable transmitter, wherein the removable transmitter comprises:

at least one audio port configured to receive an audio signal representative of received audio input from the phone apparatus,

a transmitter device,

modulation circuitry operable to convert the audio signal to one or more electrical pulses to drive the transmitter device to transmit signals representative of the audio signal,

a microphone coupled to the at least one audio port of the removable transmitter and operable to generate an audio signal from received sound input of a user, wherein the audio signal generated from received sound input of the user is provided to the audio port of the communication apparatus via the audio port of the removable transmitter, and

a transmitter housing enclosing at least the modulation circuitry and the microphone; and

securing the removable transmitter onto the phone apparatus, wherein the transmitter housing of the removable transmitter is of a size smaller than the phone apparatus.

30. **(Rejected)** The method of claim 29, wherein the size of the transmitter housing comprises a volume less than about 5 cm^3.

31. **(Rejected)** The method of claim 29, wherein the transmitter housing is configured to be removably coupled to a removable battery apparatus, and further wherein the method comprises:

providing the removable battery apparatus; and

coupling the removable battery apparatus to the transmitter housing when the transmitter housing is secured onto the phone apparatus.

32. **(Rejected)** The method of claim 29, wherein providing the removable transmitter comprises providing a removable infrared transmitter, wherein the removable infrared transmitter comprises at least one infrared light emitting device mounted on the transmitter housing, and further wherein the modulation circuitry is operable to convert the audio signal to one or more electrical pulses to drive the infrared light emitting device to transmit one or more corresponding infrared pulses.

33. **(Rejected)** The method of claim 29, wherein securing the removable transmitter to the phone apparatus comprises using a two faced adhering system to attach the removable transmitter to the phone apparatus.

34. **(Rejected)** The method of claim 29, wherein the method further comprises:

detaching the removable transmitter from the phone apparatus; and

securing the removable transmitter to a different phone apparatus.

35. **(Rejected)** A portable communication system for use by a user with a communication apparatus having an audio port, the system comprising:

a transmitter apparatus, wherein the transmitter apparatus comprises:

at least one audio port configured to receive an audio signal representative of received audio input from the communication apparatus,

modulation circuitry operable to convert the audio signal to one or more constant width electrical pulses to drive a transmitter to transmit one or more corresponding constant width pulses,

a microphone coupled to the at least one audio port of the transmitter apparatus and operable to generate an audio signal from received sound input of the user, wherein the audio signal generated from received sound input of the user is provided to the audio port of the communication apparatus via the audio port of the transmitter apparatus, and

a transmitter housing enclosing the modulation circuitry and the microphone, wherein the transmitter housing is of a size smaller than the communication apparatus and configured to be removably coupled onto the communication apparatus; and

a receiver apparatus operable for communication with the transmitter apparatus, wherein the receiver apparatus comprises:

a detection device to detect the one or more corresponding constant width pulses and generate one or more electric signals representative of the detected pulses,

a speaker,

demodulation circuitry operable to convert the one or more electric signals representative of the detected pulses to an audio signal to power the speaker to produce a sound output, and

a receiver housing enclosing at least the speaker and the demodulation circuitry, wherein the receiver housing is formed to be self-supported by the ear of the user.

36. **(Rejected)** The system of claim 35, wherein the microphone is coupled to the at least one audio port of the transmitter apparatus via an amplification circuit to provide the audio signal with a gain.

37. **(Rejected)** The system of claim 36, wherein the gain is in the range of 2 to 20.

38. **(Rejected)** The system of claim 35, wherein the transmitter housing comprises means for removably attaching the transmitter housing to the communication apparatus.

39. **(Rejected)** The system of claim 38, wherein the transmitter housing is removably coupled onto the communication apparatus by a two faced adhering system.

40. **(Rejected)** The system of claim 35, wherein the receiver housing comprises an in the ear receiver housing securable within the concha of the ear.

41. **(Rejected)** The system of claim 35, wherein the receiver housing comprises a behind the ear receiver housing securable by the pinna of the ear.

42. **(Rejected)** The system of claim 35, wherein the at least one audio port configured to receive an audio signal representative of received audio input from the communication apparatus comprises an audio port configured for wired connection to the audio port of the communication apparatus.

43. **(Rejected)** The system of claim 42, wherein the communication apparatus is a phone apparatus having a microphone/speaker audio port, and further wherein the audio port of the

transmitter apparatus is configured for wired connection to the microphone/speaker audio port by a cord/plug connector apparatus.

44. **(Rejected)** The system of claim 35, wherein the size of the transmitter housing comprises a volume less than about 5 cm^3.

45. **(Rejected)** A portable communication system for use by a user with a communication apparatus having an audio port, the system comprising:

a transmitter apparatus, wherein the transmitter apparatus comprises:

at least one audio port configured to receive an audio signal representative of received audio input from the communication apparatus via a wired connection with the audio port of the communication apparatus,

modulation circuitry operable to convert the audio signal to one or more constant width electrical pulses to drive a transmitter to transmit one or more corresponding constant width pulses, and

a transmitter housing enclosing at least the modulation circuitry, wherein the transmitter housing is of a size smaller than the communication apparatus and configured to be removably coupled onto the communication apparatus; and

a receiver apparatus operable for communication with the transmitter apparatus, wherein the receiver apparatus comprises:

a detection device to detect the one or more corresponding constant width pulses and generate one or more electric signals representative of the detected pulses,

a speaker,

demodulation circuitry operable to convert the one or more electric signals representative of the detected pulses to an audio signal to power the speaker to produce a sound output, and

a receiver housing enclosing at least the speaker and the demodulation circuitry, wherein the receiver housing comprises an opening defined therein configured to receive

a removable battery apparatus, and further wherein the receiver housing is formed to be self-supported by the ear of the user.

46. **(Rejected)** The system of claim 45, wherein the transmitter housing comprises means for removably attaching the transmitter housing to the communication apparatus.

47. **(Rejected)** The system of claim 45, wherein the receiver housing comprises an in the ear receiver housing securable within the concha of the ear.

48. **(Rejected)** The system of claim 45, wherein the receiver housing further includes a supporting ear hook extending therefrom.

49. **(Rejected)** The system of claim 45, wherein the modulation circuitry comprises:

pulse width modulation circuitry to convert the audio signal using a carrier signal to one or more width modulated pulses, wherein the width of the one or more pulses is varied as a function of the audio signal;

an edge detect circuit to detect the edges of the one or more width modulated pulses and generating constant width pulses based on the detected edges; and

a pulse driver circuit to drive an RF transmitting device.

50. **(Rejected)** The system of claim 45, wherein the demodulation circuitry comprises:

pulse detection circuitry to convert the one or more electrical signals representative of the detected pulses to one or more constant width pulses based thereon;

pulse width convertor circuitry to convert the one or more constant width pulses to one or more width modulated pulses; and

pulse width modulation circuitry to convert the one or more width modulated pulses to an audio signal for application to the speaker.

51. **(Rejected)** A portable transmitter apparatus for use by a user with a communication apparatus having an audio port, the apparatus comprising:

at least one audio port configured to receive an audio signal representative of received audio input from the communication apparatus;

modulation circuitry operable to convert the audio signal to one or more constant width electrical pulses to drive a transmitter to transmit one or more corresponding constant width pulses;

a microphone coupled to the at least one audio port of the transmitter apparatus and operable to generate an audio signal from received sound input of the user, wherein the audio signal generated from received sound input of the user is provided to the audio port of the communication apparatus via the audio port of the transmitter apparatus; and

a transmitter housing enclosing at least the modulation circuitry and the microphone, wherein the transmitter housing is of a size smaller than the communication apparatus and configured to be removably coupled onto the communication apparatus.

52. **(Rejected)** The apparatus of claim 51, wherein the microphone is coupled to the at least one audio port of the transmitter apparatus via an amplification circuit to provide the audio signal with a gain.

53. **(Rejected)** The apparatus of claim 52, wherein the gain is in the range of 2 to 20.

54. **(Rejected)** The apparatus of claim 51, wherein the transmitter housing comprises means for removably attaching the transmitter housing to a phone apparatus.

55. **(Rejected)** The apparatus of claim 51, wherein the modulation circuitry comprises:

pulse width modulation circuitry to convert the audio signal using a carrier signal to one or more width modulated pulses, wherein the width of the one or more pulses is varied as a function of the audio signal;

an edge detect circuit to detect the edges of the one or more width modulated pulses and generating constant width pulses based on the detected edges; and

a pulse driver circuit to drive an RF transmitting device.

56. **(Rejected)** The apparatus of claim 55, wherein modulation circuitry comprises voice activated power up circuitry.

57. **(Rejected)** The apparatus of claim 51, wherein the at least one audio port of the transmitter apparatus configured to receive an audio signal representative of received audio input from the communication apparatus comprises an audio port configured for wired connection to the audio port of the communication apparatus.

58. **(Rejected)** The apparatus of claim 57, wherein the communication apparatus is a phone apparatus having a microphone/speaker audio port, and further wherein the audio port of the transmitter apparatus is configured for wired connection to the microphone/speaker audio port by a cord/plug connector apparatus.

59. **(Rejected)** The apparatus of claim 51, wherein the size of the transmitter housing comprises a volume less than about 5 cm^3.

60. **(Rejected)** The apparatus of claim 51, wherein the transmitter housing is configured with an opening to receive a removable battery apparatus.

61. **(Rejected)** A portable receiver apparatus comprising:

a detection device to detect one or more pulses and generate one or more electrical signals representative of the detected pulses;

a speaker;

demodulation circuitry operable to convert the one or more electrical signals

representative of the detected pulses to an audio signal to power the speaker to produce a sound output, wherein the demodulation circuitry comprises:

pulse detection circuitry to convert the one or more electrical signals representative of the detected pulses to one or more constant width pulses based thereon,

pulse width convertor circuitry to convert the one or more constant width pulses to one or more width modulated pulses, and

pulse width demodulation circuitry to convert the one or more width modulated pulses to the audio signal for application to the speaker, and

a housing enclosing at least the speaker and the demodulation circuitry, wherein the housing is formed to be self-supported by the ear of a user.

62. **(Rejected)** The apparatus of claim 61, wherein the housing comprises:

a body portion extending from a first end to a second end along a body portion axis to enclose at least a portion of the demodulation circuitry; and

an ear retaining portion enclosing the speaker, wherein the ear retaining portion extends from the first end of the body portion along an axis of predominate sound direction of the speaker that is orthogonal to the body portion axis, wherein the ear retaining portion comprises a compactable and expandable material for insertion in the concha of the ear.

63. **(Rejected)** The apparatus of claim 62, wherein the body portion comprises at least one surface that lies a certain distance from the body portion axis in the direction of extension of the ear retention portion, and further wherein the compactable and expandable material of the ear retaining portion is positioned a further distance from the body portion axis than the at least one surface of the body portion.

64. **(Rejected)** The apparatus of claim 62, wherein the detection device comprises an the infrared light detection device positioned at the second end of the body portion to detect infrared pulses and generate the electrical signals representative of such detected infrared pulses.

65. **(Rejected)** The apparatus of claim 62, wherein the body portion comprises an opening defined therein configured to receive a removable battery apparatus.

66. **(Rejected)** The apparatus of claim 65, wherein at least one of the body portion and the removable battery apparatus comprises retaining structure to secure the removable battery apparatus in the opening.

67. **(Rejected)** The apparatus of claim 62, wherein the removable battery apparatus is configured to receive one or more button type batteries.

68. **(Rejected)** The apparatus of claim 62, wherein a size of the body portion comprises a volume less than about 13 cm^3.

69. **(Rejected)** A portable receiver apparatus comprising:

an ear retaining portion enclosing a speaker, wherein the ear retaining portion terminates with a compactable and expandable material for insertion in the concha of an ear of a user; and

a body portion extending from a first end to a second end along a body portion axis, wherein the ear retaining portion extends from the first end of the body portion along an axis of predominate sound direction of the speaker that is orthogonal to the body portion axis, wherein an infrared light detection device is positioned at the second end of the body portion to detect infrared pulses and generate one or more electrical signals representative of such detected infrared pulses, and further wherein the body portion encloses at least demodulation circuitry operable to convert the one or more electrical signals representative of the detected infrared pulses to an audio signal to power the speaker to produce a sound output, wherein the demodulation circuitry comprises:

pulse detection circuitry to convert the one or more electrical signals representative of the detected infrared pulses to one or more constant width pulses based thereon,

pulse width convertor circuitry to convert the one or more constant width pulses to one or more width modulated pulses, and

pulse width demodulation circuitry to convert the one or more width modulated pulses to an audio signal for application to the speaker.

70. **(Rejected)** The apparatus of claim 69, wherein the body portion comprises at least one surface that lies a certain distance from the body portion axis in the direction of extension of the ear retention portion, and further wherein the compactable and expandable material of the ear retaining portion is positioned a further distance from the body portion axis than the at least one surface of the body portion.

71. **(Rejected)** The apparatus of claim 69, wherein the body portion comprises an opening defined therein configured to receive a removable battery apparatus.

72. **(Rejected)** The apparatus of claim 71, wherein at least one of the body portion and the removable battery apparatus comprises retaining structure to secure the battery apparatus in the opening.

73. **(Rejected)** The apparatus of claim 71, wherein the removable battery apparatus is configured to receive one or more button type batteries.

74. **(Rejected)** The apparatus of claim 69, wherein the size of the body portion comprises a volume less than about 13 cm^3.

75. **(Rejected)** A portable receiver apparatus comprising:

ear retaining means for enclosing a speaker and configured for insertion in the concha of an ear of a user;

infrared light detection means for detecting infrared pulses and generating one or more electrical signals representative of such detected infrared pulses; and

body portion means for enclosing at least demodulation means for converting the one or more electrical signals representative of the detected infrared pulses to an audio signal to power the speaker to produce a sound output, the body portion means extending from a first end to a second end along a body portion axis, wherein the ear retaining means extends from the first end of the body portion along an axis of predominate sound direction of the speaker that is orthogonal to the body portion axis and further wherein the infrared light detection means is positioned at the second end of the body portion means.

76. **(Rejected)** The apparatus of claim 75, wherein the body portion means comprises means for receiving a removable battery apparatus.

77. **(Rejected)** The apparatus of claim 76, wherein at least one of the body portion means and the removable battery apparatus comprises retaining means to secure the battery apparatus in the body portion means.

78. **(Rejected)** The apparatus of claim 75, wherein a size of the body portion means is of a volume less than about 13 cm^3.

EVIDENCE APPENDIX

Serial No. 09/826,394

Docket No. 316.0010 0120 *(formerly 129.00100120)*

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1. May (U.S. Patent No. 5,446,783 A) (first cited by Appellant on a 1449 form filed with an Information Disclosure Statement submitted 27 October 2003)

2. Rybicki et al. (U.S. Patent No. 6,151,149) (entered into the record by citation within the non-final Office Action mailed 10 May 2004)

3. Ruppert et al. (U.S. Patent No. 6,236,969 B1) (entered into the record by citation within the non-final Office Action mailed 10 May 2004)

4. Pieterse et al. (U.S. Patent No. 5,714,741 A) (entered into the record by citation within the non-final Office Action mailed 10 May 2004)

5. Weatherill (U.S. Patent No. 5,881,149) (first cited by Appellant on a 1449 form filed with an Information Disclosure Statement submitted 27 July 2001)

6. Noetzel (U.S. Patent No. 4,980,926 A) (entered into the record by citation within the non-final Office Action mailed 10 May 2004)

RELATED PROCEEDINGS APPENDIX

Serial No. 09/826,394

Docket No. 316.0010 0120 *(formerly 129.00100120)*

There are no Appeals or Interferences known to Appellant's Representatives which would directly affect, be directly affected by, or have a bearing on the Board's decision in the pending Appeal.